

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



October 10, 2011

Advice Letter 3752-E

Brian K. Cherry
Vice President, Regulation and Rates
Pacific Gas and Electric Company
77 Beale Street, Mail Code B10C
P.O. Box 770000
San Francisco, CA 94177

Subject: Irrigation District and Water Agency Letter Agreement and Legacy Costs

Dear Mr. Cherry:

Advice Letter 3752-E is effective May 5, 2011 per Resolution E-4403.

Sincerely,

A handwritten signature in blue ink that reads "Julie A. Fitch".

Julie A. Fitch, Director
Energy Division

November 5, 2010

Advice 3752-E

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

**Subject: Irrigation District and Water Agency Letter Agreement and
Legacy Costs**

Pacific Gas and Electric Company (PG&E) hereby seeks California Public Utilities Commission (CPUC) approval of letter agreements executed with South Feather Water & Power Agency (SFWP) for the Lost Creek Dam Agreement and the Sly Creek Dam Agreement (Dam Agreements). The Dam Agreements are cost sharing agreements between SFWP and PG&E for late-term capital investments.

In addition, PG&E seeks CPUC approval of a letter agreement between PG&E and SFWP for legacy costs (Legacy Cost Agreement).¹ The Legacy Cost Agreement delineates the cost responsibility for certain work started prior to June 30, 2010, the power contract expiration date, but that will be completed after contract expiration.

Background

SFWP is one of six irrigation districts and water agencies (IDWA) from which PG&E receives/received power under 50-year term power purchase agreements.² The two SFWP power purchase contracts include, the South Fork Project Power Purchase Contract (PPC), executed June 15, 1960, and the Sly Creek Project Power Purchase Contract, executed March 26, 1981 (collectively the "SFWP PPCs"). The SFWP PPCs expired on June 30, 2010.

Within the allowable provisions of the IDWA agreements and the FERC licenses governing these hydro projects, IDWAs own and operate the projects and PG&E receives the full power production from these facilities. In return, PG&E makes payments to the IDWAs sufficient for them to pay the projects' bond indebtedness,

¹ The Legacy Cost Agreement has not been executed as of the date of this advice filing. However, PG&E does not anticipate changes to the pro forma agreement included herein in Confidential Appendix D.

² In addition to SFWP, PG&E maintains agreements with Merced Irrigation District, Nevada Irrigation District, Placer County Water Agency (PCWA), Solano Irrigation District, and Yuba County Water Agency.

operation and maintenance (O&M), and capital replacement expenses, and provides project special facilities and transmission interconnection services.

Under the provisions of these agreements, the IDWAs are obligated to:

- (1) replace structures, facilities, and equipment of the project whenever they are no longer capable of reliably or economically performing the service for which they were designed;
- (2) make changes to the project as are reasonably required to improve economy of operation; and
- (3) maintain ownership of all federal and state licenses and permits, which for the IDWA includes all necessary O&M for the project.

However, the IDWAs are only obligated to perform these functions to the extent that PG&E makes sufficient funds available to do so. In return for the power received from these projects, PG&E pays all costs associated with the IDWA projects including O&M expenses, capital replacement costs, and the IDWAs' revenue bond debt service.

Given the take-or-pay nature of these contracts, it is in the ratepayers' best interest to ensure that the IDWAs' projects are efficiently operated and economically maintained to maximize their commercial availability and value. Thus, PG&E proactively monitors, reviews, and approves the projects' O&M and regulatory compliance activities and expenses.

Although most agreements with the IDWAs are approaching the end of their 50-year contract term, many of the IDWAs must continue to make major capital improvements to either replace equipment that is approaching the end of its service life, or make improvements to existing facilities in response to regulatory mandates from agencies with jurisdiction over the projects (e.g. California Division of Safety of Dams, the Federal Energy Regulatory Commission (FERC), etc.).

Generally, PG&E and the IDWAs disagree on the level of PG&E's cost responsibility for certain late-term capital improvements, given that the equipment lifespan would extend beyond the term of the contracts. The IDWAs believe that PG&E is obligated to pay the full cost of such late term improvements; PG&E's position is that it is responsible only for a pro-rata share of the costs commensurate with the benefits ratepayers will receive over the remaining term of the contracts in proportion to the service life of the proposed improvement.

On a case-by-case basis, PG&E and the respective IDWAs have negotiated and agreed to share costs on certain late-term capital improvement projects that

extend beyond the term of the contract.³ The Dam Agreements, at issue in this advice letter, reflect such a cost sharing arrangement. The Dam Agreements provide ratepayer benefits by potentially relieving PG&E from the full cost of the improvements it might otherwise be held responsible for under the terms of the SFWP PPCs. In addition, the Dam Agreements avoid the cost and uncertainty of litigation.

In this advice letter, PG&E is also requesting approval of the Legacy Cost Agreement affirming PG&E's obligation to pay for certain ongoing O&M costs. The Legacy Cost Agreement memorializes the treatment of other ongoing project expenses that extend beyond the term of the Sly Creek PPC.

The Dam Agreements and the Legacy Cost Agreement were negotiated prior to the expiration of the SFWP PPCs. The agreements allow PG&E and SFWP to reasonably resolve the respective and differing positions regarding PG&E's obligations under the terms of the contract, and thus should be approved.

Request

1. Dam Agreements

SFWP is the owner of the South Feather Power Project (SFPP), FERC Project No. 2088, a water and hydroelectric project located on the South Fork Feather River and tributaries, of which the Sly Creek and Lost Creek dams are major components. SFWP is required by the FERC and the California Division of Safety of Dams (DSOD) to ensure that its spillway facilities are able to safely pass Probable Maximum Flood Flows (PMF), which have been accepted by both FERC and the DSOD.

SFWP has analyzed the existing spillways and determined that its spillways at Sly Creek and Lost Creek dams (Dams) are not able to pass the PMF without risk of dam failure, property damage or injury to persons; therefore FERC has ordered SFWP to modify the Dams to allow safe passage of PMF flows. In accordance with this order, SFWP has designed spillway improvements that will allow the Dams to safely pass PMF flows.

³ SFWP and PG&E entered into a cost sharing agreement on March 25, 2008, to replace a transformer and attendant 115 kV circuit breaker in 2008 such that following the 2010 expiration of the contract SFWP agreed to repay PG&E for a percentage of the project costs. (See PG&E's 2008 ERRA Compliance Review Testimony, A.09-02-008, Chapter 5, Contract Administration of Qualifying Facility and other Must-Take Power Purchase Agreements which was approved in D.09-12-002). Additionally, on September 28, 2009, PG&E and PCWA entered into a Joint Funding Agreement whereby the parties agreed to split the estimated cost of a spillway improvement project. See PG&E's 2009 ERRA Compliance Review Testimony, A.10-02-012, Chapter 5, Contract Administration of Qualifying Facility and other Must-Take Power Purchase Agreements which is pending approval.

PG&E contends that the SFWP PPCs do not obligate PG&E to pay for the full costs of the Dam spillway improvements, and SFWP disputes PG&E's contention. To resolve this dispute, PG&E and SFWP have negotiated the Dam Agreements to share responsibility for funding the remaining design and the construction of the Dam modifications. PG&E requests that the CPUC approve the Dam Agreements and allow PG&E to fully recover the costs that it incurs under these agreements through the Energy Resource Revenue Account (ERRA). A summary of the cost sharing arrangement proposed in the Dam Agreements is included in Confidential Appendix B. The Dam Agreements are included in Confidential Appendix D.

2. Legacy Costs Agreement

Although the SFWP PPCs expired on June 30, 2010, PG&E and SFWP have agreed certain ongoing project expenses will be borne by PG&E and paid after the contract expiration date. The Legacy Cost Agreement memorializes the parties' responsibilities for O&M project expenses that extend beyond June 30, 2010, but for which cost responsibility was fully determined to be PG&E's obligation prior to the expiration date. Completion of the work was delayed beyond June 30, 2010, because of procurement delays, unforeseen technical problems, and/or unavailability of labor resources.

These costs are conceptually different from the costs in the Dam Agreements described above. The Dam costs are "shared costs" which neither PG&E nor SFWP feel they are responsible for, but were agreed to by both parties to avoid protracted litigation. However, the Legacy Costs are for repairs and improvements that are adequately deemed PG&E's responsibility for reimbursement under the SFWP PPCs and were already in progress prior to June 30, 2010.

PG&E requests that the CPUC approve the Legacy Cost Agreement and allow PG&E to fully recover the costs that it incurs under this agreement through ERRA. A summary of the legacy costs and cost sharing arrangements related to these legacy costs is included in Confidential Appendix B. The Legacy Cost Agreement is included in Confidential Appendix D.

Conclusion

PG&E requests that the CPUC approve the Dam Agreements related to the Lost Creek Dam and Sly Creek Dam and the recovery of the associated costs in ERRA.

PG&E also requests that the Commission approve the Legacy Costs Agreement and recovery of associated costs, which will be borne by PG&E and paid after the expiration of the SFWP PPCs, in ERRA.

Protests

Anyone wishing to protest this filing may do so by letter sent via U.S. mail, by facsimile or electronically, any of which must be received no later than **November 29, 2010**.⁴ Protests should be mailed to:

CPUC Energy Division
Tariff Files, Room 4005
DMS Branch
505 Van Ness Avenue
San Francisco, California 94102

Facsimile: (415) 703-2200
E-mail: ijnj@cpuc.ca.gov and mas@cpuc.ca.gov

Copies of protests also should be mailed to the attention of the Director, Energy Division, Room 4004, at the address shown above.

The protest also should be sent via U.S. mail (and by facsimile and electronically, if possible) to PG&E at the address shown below on the same date it is mailed or delivered to the Commission:

Jane K. Yura
Vice President, Regulation and Rates
Pacific Gas and Electric Company
77 Beale Street, Mail Code B10B
P.O. Box 770000
San Francisco, California 94177

Facsimile: (415) 973-6520
E-mail: PGETariffs@pge.com

Effective Date

PG&E requests that this Tier 3 advice filing become effective on the day of filing, **November 5, 2010**.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list. Address changes to the General Order 96-B service list should be directed to email PGETariffs@pge.com. For changes to any other service list, please contact

⁴ Twenty days after the date of this filing falls on the Thanksgiving holiday. As such, this is the first business date after the holiday.

the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter filings can also be accessed electronically at <http://www.pge.com/tariffs>.

Jane Yura - OB

Vice President, Regulation and Rates

Limited Access to Confidential Material:

The portions of this Advice Letter marked Confidential Protected Material are submitted under the confidentiality protections of Sections 583 of the PU Code and GO 66-C. A separate Declaration Seeking Confidential Treatment regarding the confidential information is filed concurrently herewith.

Attachments:

- Appendix A: South Feather Water & Power Agency Power Purchase Contracts
- Confidential Appendix B: Summary of Dam Agreements and Legacy Cost Agreement
- Confidential Appendix C: Declaration of Annette Faraglia Seeking Confidential Treatment for Certain Data and Information Contained in Advice 3752-E
- Confidential Appendix D: Dam Agreements and Legacy Cost Agreement

CALIFORNIA PUBLIC UTILITIES COMMISSION

ADVICE LETTER FILING SUMMARY ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No. **Pacific Gas and Electric Company (ID U39 M)**

Utility type:

ELC

GAS

PLC

HEAT

WATER

Contact Person: Olivia Brown

Phone #: 415.973.9312

E-mail: oxb4@pge.com

EXPLANATION OF UTILITY TYPE

ELC = Electric

GAS = Gas

PLC = Pipeline

HEAT = Heat

WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: 3752-E

Tier: 3

Subject of AL: Irrigation District and Water Agency Letter Agreement and Legacy Costs

Keywords (choose from CPUC listing): Agreements

AL filing type: Monthly Quarterly Annual One-Time Other _____

If AL filed in compliance with a Commission order, indicate relevant Decision/Resolution #: N/A

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: No

Summarize differences between the AL and the prior withdrawn or rejected AL: N/A

Is AL requesting confidential treatment? If so, what information is the utility seeking confidential treatment for: No

Confidential information will be made available to those who have executed a nondisclosure agreement: Yes

Name(s) and contact information of the person(s) who will provide the nondisclosure agreement and access to the confidential information: Charles Middlekauff at 415.973.6971 or crmd@pge.com

Resolution Required? Yes No

Requested effective date: November 5, 2010

No. of tariff sheets: N/A

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting). N/A

Tariff schedules affected: N/A

Service affected and changes proposed: N/A

Protests, dispositions, and all other correspondence regarding this AL are due no later than 20 days after the date of this filing, unless otherwise authorized by the Commission, and shall be sent to:

CPUC, Energy Division

Tariff Files, Room 4005

DMS Branch

505 Van Ness Ave., San Francisco, CA 94102

jnj@cpuc.ca.gov and mas@cpuc.ca.gov

Pacific Gas and Electric Company

Attn: Jane K. Yura, Vice President, Regulation and Rates

77 Beale Street, Mail Code B10B

P.O. Box 770000

San Francisco, CA 94177

E-mail: PGETariffs@pge.com

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

**DECLARATION OF SHANNON L. SIMS IN SUPPORT OF
ADVICE 3752-E, CONFIDENTIAL APPENDICES B THROUGH D**

I, Shannon L. Sims, declare:

1. I am a Senior Regulatory Analyst in the Energy Proceedings department at Pacific Gas and Electric Company (PG&E). I am responsible for short-term electric procurement cost recovery and reporting requirements at PG&E. In carrying out these responsibilities, I have acquired knowledge of PG&E's contracts with irrigation districts and water agencies (IDWA).

2. Based on my knowledge and experience, and in accordance with the "Administrative Law Judge's Ruling Clarifying Interim Procedures For Complying With Decision 06-06-066," issued in Rulemaking 05-06-040 on August 22, 2006, I make this declaration seeking confidential treatment of Confidential Appendices B through D of Advice 3752-E.

3. Attached to this declaration is a matrix that identifies the data and information for which PG&E is seeking confidential treatment. The matrix specifies that the material PG&E is seeking to protect constitutes the particular type of data and information listed in the "IOU Matrix" attached as Appendix 1 of Decision 06-06-066. The matrix also specifies the category or categories in the IOU Matrix to which the data and information corresponds, and why confidential protection is justified. Finally, the matrix specifies that: (1) PG&E is complying with the limitations specified in the IOU Matrix for that type of data or information; (2) the information is not already public; and (3) the data cannot be aggregated, redacted, summarized or otherwise protected in a way that allows partial disclosure. By this reference I am incorporating into this declaration all of the explanatory text in the attached matrix.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct. Executed on November 5, 2010, at San Francisco, California.

/s/

SHANNON L. SIMS

1	PACIFIC GAS AND ELECTRIC COMPANY							
2	Document: Appendices B through D of Advice 3752-E							
3	IDENTIFICATION OF CONFIDENTIAL INFORMATION PER DECISION 06-06-066							
4	Date: November 5, 2010							
5								
6	Redaction Reference	1) The material submitted constitutes a particular type of data listed in the Matrix, appended as Appendix 1 to D.06-06-066 (Y/N)	2) Which category or categories in the Matrix the data correspond to:	3) That it is complying with the limitations on confidentiality specified in the Matrix for that type of data (Y/N)	4) That the information is not already public (Y/N)	5) The data cannot be aggregated, redacted, summarized, masked or otherwise protected in a way that allows partial disclosure (Y/N)	PG&E's Justification for Confidential Treatment	Length of Time
7								
8	Confidential Appendix B - Summary of Dam Agreements and Legacy Cost Agreement	Y	Page 15, Section VII - Bilateral Contract Terms and Conditions - Electric, Section B	Y	N	N	Specific Agreement Terms and Conditions are market sensitive information	3-years from the date contract states deliveries to begin; or until one year following expiration whichever comes first
9	Confidential Appendix C - Declaration of Annette Faraglia Seeking Confidential Treatment for Certain Data and Information Contained in Advice 3752-E	Y	Page 15, Section VII - Bilateral Contract Terms and Conditions - Electric, Section B	Y	N	N	Specific Agreement Terms and Conditions are market sensitive information	3-years from the date contract states deliveries to begin; or until one year following expiration whichever comes first
10	Confidential Appendix D - Dam Agreements and Legacy Cost Agreement	Y	Page 15, Section VII - Bilateral Contract Terms and Conditions - Electric, Section B	Y	N	N	Specific Agreement Terms and Conditions are market sensitive information	3-years from the date contract states deliveries to begin; or until one year following expiration whichever comes first

6-15-62
RETURN TO BWR

CONTRACT

between

OROVILLE-WYANDOTTE IRRIGATION DISTRICT

and

PACIFIC GAS AND ELECTRIC COMPANY

~~2010~~
2010

200,000

NOTE: Words underlined in the original text are italicized in this printed text.

SOUTH FORK PROJECT POWER PURCHASE CONTRACT

THIS CONTRACT made this 15th day of June, 1960, by and between PACIFIC GAS AND ELECTRIC COMPANY, hereinafter referred to as "Pacific", and OROVILLE-WYANDOTTE IRRIGATION DISTRICT, hereinafter referred to as "Oroville"

WITNESSETH that:

1. This contract includes Appendix A, Definitions; Appendix B, Requirements and General Specifications for South Fork Project; Appendix C, Operation and Maintenance Requirements; and Appendix D, Table of Storage Requirements for Determination of *Full Operation Date*. For clearness, words or phrases defined in Appendix A, other than proper names, are underlined in the text.
2. Oroville shall construct at its own risk and expense, and shall be the sole owner (under Federal Power Commission License) of, the *project*. Oroville shall design, construct, purchase and install all structures, equipment, and facilities to meet the requirements and specifications of Appendix B and all other related equipment and facilities. The *project* shall be substantially equal in quality and design of materials, and in equipment and facilities provided, to those which Pacific has installed in its hydroelectric projects during the last 15 years on Mokelumne River, Feather River, Pit River and Kings River. Pacific shall make available to Oroville for inspection at Pacific's office, plans and specifications of said plants of Pacific, and Oroville may inspect any of such plants.
- Oroville shall submit to Pacific from time to time, and as soon as possible, the plans and specifications of all portions of the *project*. Pacific shall have the right to inspect all work performed by or for Oroville in constructing elements of the *project*. Neither approval of, nor failure by Pacific to approve, any plans or specifications, or inspection of any work hereunder, shall relieve Oroville of the responsibility of meeting the requirements and general specifications set forth in Appendix B, nor shall Pacific be responsible for strength, details of design, adequacy or capability of any structure, facility or work.
3. Oroville shall acquire and, to the extent that it can do so with money available from payments made by Pacific pursuant to paragraph 9(b) and from money available in the operation and maintenance fund as provided in Appendix C-IV, shall maintain ownership of all lands, easements, flowage rights, water rights, Federal and State licenses and permits, and all other rights and privileges necessary for the foregoing purposes and for the operation and maintenance of its works and facilities in accordance with Appendix C.
4. On and after the *full operation date*, Oroville, to the extent that it can do so with money available from payments made by Pacific pursuant to paragraph 9(b) and from money available in the operation and maintenance fund as provided in Appendix C-IV, (a) shall operate, maintain, and carry third-party bodily injury and property damage liability insurance and property insur-

ance on, the *project* substantially in accordance with the practice followed by Pacific with respect to its hydroelectric projects under Federal Power Commission License, (b) shall replace structures of the *project* whenever they no longer are capable of reliably or economically performing the service for which they were designed and (c) shall operate such switching facilities as Pacific may install from time to time at the power plants of the *project*.

5. Pacific shall construct, own, operate and maintain at its own risk and expense transmission lines required to transmit the power generated by the *project* into Pacific's transmission network. Pacific shall acquire all lands, easements, Federal and State permits and all other rights and privileges necessary to carry out its obligations under this paragraph.

6. Oroville shall schedule *operable* dates for all power plants of the *project* and notify Pacific thereof 18 months in advance of the scheduled date for each power plant. Pacific shall complete transmission lines to each power plant on or prior to its said scheduled *operable* date.

7. Oroville shall sell and deliver to Pacific during the term of this contract all the electric power and energy generated by the power plants of the *project*, except the power and energy necessary for *project power plant use*. Delivery of power and energy to Pacific shall be at Oroville's high tension disconnect switch at each power plant, except for such power and energy as Pacific shall request to be delivered to it for transmission at generator voltage, in which case such protective devices as Oroville deems necessary shall be installed by Pacific at its expense.

8. Prior to the *full operation date* Pacific shall pay Oroville each month \$.0027 per kilowatt-hour for energy delivered to Pacific hereunder during the preceding month.

9. Following the *full operation date* and until the termination of this contract, Pacific shall pay Oroville for all power and energy delivered hereunder, (a) at the semi-annual rate of \$1,564,000 and, in addition, (b) at the monthly rate of \$12,500.

10. Following the *full operation date* and until the termination of this contract, Pacific also shall pay Oroville each month as set forth below for energy generated during the preceding month by water available for use by Oroville under the schedules contained in Appendix C-2 and released through the power plants of the *project*; provided, that Oroville has given Pacific 60 days advance notice in writing of the amount of such water which will be available and Pacific has within 30 days thereafter informed Oroville in writing that Pacific can make use of the energy so generated:

- (a) \$3.60 per acre foot of water usable at Woodleaf Power Plant.
- (b) \$2.00 per acre foot of water usable at Forbestown Power Plant, and
- (c) \$1.50 per acre foot of water usable at Kelly Ridge Power Plant.

11. Payments under paragraph 9(a) shall be due and payable each June 15 and December 15 for the semi-annual periods ending on the next succeeding June 30 and December 31, respectively. The first payment shall be prorated according to the ratio of the number of days for which payment is to be made to the number of days in the semi-annual period for which payment otherwise would be due. Payments under paragraph 9(b) for each month or part thereof shall be due and payable on the fifteenth day of the following month. Payments under paragraphs 8 and 10 shall be due and payable each month within 15 days after receipt of invoice.

12. (a) Subject to the provisions of paragraphs 17 and 18, Pacific's obligation under paragraph 9 shall not be dependent upon all or any part of the *project* continuing to be capable of operation, nor shall its obligation under paragraph 9 be dependent upon the ability of Pacific to take energy produced by or made available from the *project*. This provision, however, shall not be deemed to relieve Oroville of any of its obligations hereunder.

(b) Pacific may offset against any amounts due from it to Oroville hereunder any amounts due to Pacific from Oroville by reason of this contract or any breach thereof, except that no offset shall be applied by Pacific to reduce the payments due from it to Oroville under the provisions of paragraph 9.

13. Oroville shall maintain and defend its water rights necessary or useful to the operation of the *project* and shall not voluntarily convey, transfer or in any manner encumber any of such rights without the written consent of Pacific.

14. Oroville shall permit all roads, lands, rights of way and structures owned or controlled by it for *project* purposes to be used by Pacific, without additional cost or expense, for construction, installation, operation and maintenance of any works or facilities of Pacific now in existence or hereafter constructed or installed. Pacific shall permit use by Oroville of Pacific's roads and rights of way without cost or expense for the purpose of constructing, maintaining and operating facilities of the *project*.

15. Oroville shall indemnify Pacific, its officers, agents, and employees against all loss, damage, expense, and liability to third persons for injury to or death of person or injury to property, proximately caused by Oroville's construction, ownership, operation, or maintenance of, or by failure of, any of Oroville's works or facilities used in connection with the *project*. Oroville shall, on Pacific's request, defend any suit asserting a claim covered by this indemnity. Oroville shall pay any costs that may be incurred by Pacific in enforcing this indemnity.

Pacific shall indemnify Oroville, its officers, agents, and employees against all loss, damage, expense, and liability to third persons for injury to or death of person or injury to property, proximately caused by Pacific's construction, ownership, operation, or maintenance of, or by failure of, any of Pacific's works or facilities used in connection with the *project*. Pacific shall, on Oroville's request, defend any suit asserting a claim covered by this indemnity. Pacific shall pay any costs that may be incurred by Oroville in enforcing this indemnity.

16. This contract shall be effective upon due execution by the parties hereto.

17. Oroville intends to finance construction of the *project* by the issue and sale of revenue bonds, and Oroville shall proceed diligently with all necessary action to complete such financing; provided, that Oroville shall not be required to accept or agree to any conditions or obligations in connection with any such financing which it deems unreasonably burdensome. If Oroville shall have proceeded diligently but shall not have completed such financing on terms satisfactory to it and awarded *project* construction contracts prior to August 1, 1960, this contract shall thereupon terminate and neither party shall have any further obligation to the other under this contract or be liable to the other by reason of any expenses incurred or obligations undertaken for the performance by it of this contract or for any damages suffered as a result of the termination of this contract.

Upon completion of such financing Oroville shall furnish Pacific with a certificate to that effect. Such certificate shall be binding and conclusive upon Oroville and thereafter there shall be no termination of Oroville's obligations under this contract by reason of any provisions of this paragraph.

18. Except as provided in paragraph 17, this contract shall remain in effect so long as Oroville shall hold a license under the Federal Power Act and other necessary rights for the *project* permitting full performance by it of this contract but not beyond July 1, 2010. Termination of this contract as a result of the loss by Oroville of rights necessary for the full performance of this contract with respect to the *project* shall not affect obligations of either party accrued hereunder prior to such termination, but no further obligation shall accrue subsequent to the date of such termination and final payments as of the date of termination shall be prorated as may be appropriate.

19. No voluntary assignment of this contract, except for security purposes in connection with Oroville's financing of the *project*, shall be effective without the written consent of Pacific.

20. Any dispute that may arise hereunder between Oroville and Pacific shall, upon the written request of either party to the other, be submitted to and decided by arbitration. Each of the parties shall, within 30 days after giving or receiving such written notice, appoint one arbitrator. If either party fails to appoint an arbitrator within such time, he shall be appointed by a Superior Court of the State of California in accordance with the California Code of Civil Procedure. At any time that either arbitrator concludes they cannot agree, the two arbitrators shall appoint a third arbitrator or if they cannot agree upon a third arbitrator, he shall be appointed by said Superior Court in accordance with said code. A decision by two of the arbitrators shall be binding on the parties. If a decision cannot be reached within 90 days after appointment of the third arbitrator, on written notice by either party to the other, the arbitrators' authority shall terminate and either party may submit the matter to an appropriate court for decision.

Each party shall bear the expenses and fees of the arbitrator appointed by it and its own expenses involved in the arbitration. The expenses and fees of the third arbitrator and all other expenses of arbitration shall be borne equally by Pacific and Oroville.

21. This contract supersedes and annuls any prior contract or understanding between the parties with respect to the matters herein contained.

IN WITNESS WHEREOF, on the date first above written the parties hereto have subscribed this agreement by their officers thereunto duly authorized.

[SEAL]

OROVILLE-WYANDOTTE IRRIGATION DISTRICT

By D. D. UPDEGRAFF *President*
and

By CHAS. H. HAUSER *Secretary*

[SEAL]

PACIFIC GAS AND ELECTRIC COMPANY

By S. L. SIBLEY *Vice-President and General Manager*
and

By J. F. TAYLOR *Assistant Secretary*

Sly	13	182	42
Wooded	55	1236	309
Freshwater	20	700	190
Kell. Ridge	10	519	60

Appendix A

DEFINITIONS

When used in this contract the following terms shall have the meanings hereinafter set forth.

FACILITIES CONSTRUCTED OR TO BE CONSTRUCTED,
PROVIDED AND OWNED BY OROVILLE

A-1. *Project*—A development using the waters of the South Fork of Feather River and its tributaries available upstream from the town of Enterprise together with a diversion from Slate Creek (a tributary of Yuba River) into Lost Creek (a tributary of South Fork of Feather River) and including *Yuba Agreement Irrigation Works*, Little Grass Valley Reservoir, South Fork Diversion, Slate Creek Diversion, Sly Creek Reservoir, Lost Creek Reservoir, Woodleaf Power Plant, Forbestown Power Plant, Ponderosa Reservoir, Miners Ranch Conduit, Miners Ranch Reservoir, Kelly Ridge Power Plant, *project communication facilities*, *project headquarters*, *project roads*, tools, operation and maintenance equipment, and all necessary appurtenances for each of the foregoing.

A-2. *Little Grass Valley Reservoir*—A dam on the South Fork of Feather River immediately downstream from Little Grass Valley, the reservoir resulting from the construction of such a dam, and appurtenant facilities.

A-3. *South Fork Diversion*—A dam on the South Fork of Feather River, a tunnel leading to Sly Creek Reservoir, and appurtenant facilities.

A-4. *Slate Creek Diversion*—A diversion dam on Slate Creek, a tunnel leading to Sly Creek Reservoir, and appurtenant facilities.

A-5. *Sly Creek Reservoir*—A dam on Lost Creek immediately downstream from its junction with Sly Creek, the reservoir resulting from the construction of such a dam, and appurtenant facilities.

A-6. *Lost Creek Reservoir*—An existing dam on Lost Creek, the reservoir resulting from the dam, and appurtenant facilities.

A-7. *Woodleaf Power Plant*—A hydroelectric generating facility on South Fork of Feather River near its junction with Lost Creek, including a pressure tunnel from Lost Creek Reservoir, a penstock, a powerhouse, an afterbay, and appurtenant facilities.

A-8. *Forbestown Power Plant*—A hydroelectric generating facility on South Fork of Feather River, including a pressure tunnel from the afterbay of Woodleaf Power Plant, a penstock, a powerhouse, and appurtenant facilities.

A-9. *Ponderosa Reservoir*—A dam on South Fork of Feather River downstream from the powerhouse of Forbestown Power Plant, the reservoir resulting from the construction of such a dam, and appurtenant facilities.

A-10. *Miners Ranch Conduit*—A hydraulic conduit and appurtenant structures extending from Ponderosa Reservoir to Miners Ranch Reservoir.

A-11. *Miners Ranch Reservoir*—A dam on Deadman's Ravine near the westerly terminus of Miners Ranch Conduit, the reservoir resulting from the construction of such a dam, and appurtenant facilities.

A-12. *Kelly Ridge Power Plant*—A hydroelectric generating facility on Feather River approximately four miles upstream from the City of Oroville, including a pressure tunnel from Miners Ranch Reservoir, a penstock, a powerhouse, and appurtenant facilities.

A-13. *Forbestown Ditch*—A hydraulic conduit presently extending from Lost Creek Reservoir to Lake Wyandotte and ultimately from Woodleaf Penstock to Lake Wyandotte.

A-14. *Lake Wyandotte*—An existing reservoir located on North Honcut Creek.

A-15. *Palermo Canal*—A hydraulic conduit presently extending from a diversion dam on South Fork of Feather River near the town of Enterprise to the vicinity of the town of Palermo.

A-16. *Project Communication Facilities*—Facilities required for communication among units of the *project* and for interconnections with Pacific's communication system.

A-17. *Project Headquarters*—The office, dwellings, warehouses, garages and other structures necessary for housing personnel and equipment required for the operation and maintenance of the *project*.

A-18. *Project Roads*—Such roads as are needed to make the units of the project readily accessible for proper operation and maintenance; also such additional roads as are required under license from the Federal Power Commission.

OTHER TERMS USED HEREIN

A-19. *Storage*—The amount of water held in reservoirs.

A-20. *Operable*—With respect to a power plant: Having all features and equipment operating simultaneously in such condition and adjustment that the plant is capable of continuous delivery into Pacific's transmission lines at its full rated capacity at the then existing head of water.

A-21. *Full Operation Date*—Whichever of the following dates is the first to occur after December 31, 1962, and after construction of all elements of the *project* has been fully completed and all power plants are *operable*: (a) July 1, 1964, (b) the first day when the *storage* in Little Grass Valley Reservoir and the aggregate *storage* in Little Grass Valley, Sly Creek, and Lost Creek Reservoirs is equal to or greater than the *storage* specified in Appendix D or the pro rata *storage* for days other than end of month as determined by straight-line interpolation.

A-22. *Elevation*—Height in feet above the data specified below:

- (a) Little Grass Valley Dam and Reservoir—Datum used in survey made for United States Bureau of Reclamation in 1946 by Fairchild Aerial Surveys.
- (b) Sly Creek Dam and Reservoir—Datum used in survey made for United States Bureau of Reclamation in 1946 by Fairchild Aerial Surveys.

- (c) Lost Creek Dam and features of the *project* downstream therefrom—Datum 3277 feet below spill crest of Lost Creek Dam.
- (d) South Fork Diversion and Slate Creek Diversion—Datum for Sly Creek Dam.

A-23. *Yuba Agreement*—The agreement dated March 21, 1958, between Oroville and Yuba County Water District, as amended on December 9, 1959.

A-24. *Yuba Agreement Irrigation Works*—The irrigation works to be constructed pursuant to subparagraphs 6 and 7 of Paragraph A of Part I of the *Yuba Agreement*.

A-25. *First Period*—The period commencing on the *full operation date* and extending for twenty years.

A-26. *Second Period*—The period commencing at the termination of the *first period* and extending until the contract terminates.

A-27. *Project Power Plant Use*—Use of electric power solely for operating and maintaining the powerhouses of the *project*, the Forbestown tunnel intake and Woodleaf penstock valves and afterbay gates, and not for *project headquarters* or any other purpose.

A-28. *Project Bonds*—Revenue bonds, including any refunding bonds which mature prior to the termination date of this contract, issued by Oroville to meet its obligations under the *Yuba Agreement* and under this contract.

Appendix B

REQUIREMENTS AND GENERAL SPECIFICATIONS FOR SOUTH FORK PROJECT

The following requirements and specifications cover the general conditions for the major structures, equipment and facilities of the project, except *Yuba Agreement Irrigation Works*. In addition to those herein described, the project shall contain all structures and facilities needed for the development of water and power and for the operation and maintenance of the project. Requirements and specifications contained herein may be changed by mutual consent of the parties.

All suppliers of project equipment shall be experienced in the manufacture of the class, size and rating of the various components specified herein.

B-1. Dams and Reservoirs

(a) *General for All Dams and Reservoirs*—All dams and appurtenances shall be designed and constructed according to accepted engineering principles and must be approved by the appropriate State and Federal agencies. Dams shall include appropriate cutoffs and grout curtains and all features of dams shall be so constructed as to minimize leakage. Crest gates shall provide a minimum of one foot of freeboard above maximum operating level and shall be provided with water seals to prevent leakage. All dams not having crest gates shall have the permanent spillway crest set not less than one foot above the maximum operating water surface except in the case of Miners Ranch Reservoir Dam hereinafter further specified. All crest gates shall be power operated.

All gates or valves for discharge of water or for sluicing from reservoirs or diversion ponds shall be power operated unless specifically excluded. Wherever practicable, all gates and valves shall be capable of continuous operation and be equipped for hand as well as power operation. All sluiceways shall be steel-lined. In addition to the facilities specifically required by this Appendix, all dams shall be provided with separate facilities to permit bypass of water for purposes of fish and stream maintenance as prescribed by the Federal Power Commission License for the project. Each outlet from the reservoirs or diversion ponds shall be provided with a trashrack.

(b) *Little Grass Valley Reservoir*—Little Grass Valley Dam shall be situated in Section 31, Township 22 North, Range 9 East, M.D.B. & M. The reservoir shall have a maximum storage level at elevation 5046. Minimum pool shall be 500 acre feet. Not more than the top 12 feet of storage may be subject to spillway gate control. The outlet capacity shall be not less than 300 cubic feet per second when storage is equal to 5000 acre feet. The outlet conduit shall have its upstream invert set at a level which will permit unwatering the reservoir for the performance of maintenance work. A main free discharge valve and guard valve or gate shall be provided. The free discharge valve may be equipped for hand operation only. In addition, an emergency hand operated bypass of 24-inch diameter or greater shall be provided. The free discharge valve and structure shall be suitable for continuous discharge at full range of head and openings.

(c) *South Fork Diversion*—South Fork Diversion Dam shall be situated on South Fork of Feather River in Section 29 or 30, or both, Township 21 North, Range 8 East, M.D.B. & M. It shall have an ungated overpour spill crest set at an elevation not less than one foot above the water level required to deliver through the South Fork Diversion tunnel 260 cubic feet per second into Sly Creek Reservoir when Sly Creek Reservoir water surface is at maximum storage level. A sluice shall be located with its invert not more than 10 feet above original streambed, and it shall be not less than five feet in diameter and shall be equipped with a trashrack which extends up to within five feet of the spill crest. The fish release valve shall be not less than 18 inches in diameter and shall be located adjacent to and at the invert level of the sluice. The intake to the South Fork Diversion tunnel shall be located adjacent to the dam, and the dam shall be equipped with a sluice gate of sufficient capacity to sluice streambed deposits from in front of the tunnel intake structure. The above mentioned sluice, or an additional sluice, shall be located with its trashrack not greater than 15 feet from the nearest point of the diversion tunnel intake. Provision shall be made in the dam for sluicing surface debris from the front of the intake trashrack.

(d) *Slate Creek Diversion*—Slate Creek Diversion Dam shall be situated in Section 2, Township 20 North, Range 8 East, M.D.B. & M. It shall have an ungated overpour spill crest set at an elevation one foot above the water level required to deliver through the Slate Creek Diversion tunnel 600 cubic feet per second into Sly Creek Reservoir when Sly Creek Reservoir water surface is 20 feet below maximum storage level. A sluice shall be located with its invert not more than 10 feet above original streambed, and it shall be not less than five feet in diameter and shall be equipped with a trashrack which extends up to within five feet of the spill crest. The fish release valve shall be not less than 18 inches in diameter and shall be located adjacent to and at the invert level of the sluice. The intake to the Slate Creek Diversion tunnel shall be located adjacent to the dam, and provision shall be made for preventing streambed deposits from entering the tunnel. Provision shall be made in the dam for sluicing surface and streambed debris from the front of the intake trashrack.

(e) *Sly Creek Reservoir*—Sly Creek Dam shall be situated in Sections 19 and 20, Township 20 North, Range 8 East, M.D.B. & M. The reservoir shall have a maximum storage level at elevation 3530. Minimum pool shall be 500 acre feet. Not more than the top 15 feet of storage may be subject to spillway gate control. The outlet structure shall have its upstream invert set at a level which will permit unwatering the reservoir for the performance of maintenance. Outlet capacity shall be not less than 600 cubic feet per second when storage is equal to 5000 acre feet. A main free discharge valve and guard valve or gate shall be provided. In addition, an emergency hand operated bypass of 24-inch diameter or

greater shall be provided. The free discharge valve and structure shall be suitable for continuous discharge at full range of head and openings, and shall be equipped to operate both manually and with electric power.

The discharge valve shall be float-controlled for electric power operation to maintain any specified water surface in the top 13 feet of Lost Creek Reservoir.

(f) *Lost Creek Reservoir*.—The flashboard structure and road crossing over existing Lost Creek Dam shall be replaced and shall provide for convenient, watertight and safe flashboard operation. The top of the flashboards shall be five feet above the spill crest. Provision shall be made to pass 475 cubic feet per second to the stream channel by means of a hand operated valve or valves when Woodleaf Powerhouse is not operating. The invert of outlet facilities leading to the Woodleaf Tunnel shall be not higher than elevation 3230.

(g) *Woodleaf Afterbay Dam and Reservoir*.—Woodleaf Afterbay Dam shall be situated in Section 32, Township 20 North, Range 7 East, M.D.B. & M. The dam shall have an ungated spill crest of maximum length to minimize depth of overpour but in no case less than 132 feet. The spill crest shall be at elevation 1783 and maximum operating water level shall be at elevation 1782. A five-foot diameter sluice shall be located with centerline approximately 20 feet above streambed and with a trash-rack extending 30 feet above said centerline.

(h) *Ponderosa Reservoir*.—Ponderosa Dam shall be situated in Section 33, Township 20 North, Range 6 East, M.D.B. & M. The normal maximum operating water surface shall not exceed elevation 960. There shall be not less than 1250 acre feet in the space between the minimum level required to discharge 275 cubic feet per second into Miners Ranch Conduit and the maximum normal operating level. If spillway gates are used, the sills shall be at a level that will provide at least 600 acre feet of storage above the level necessary in order to discharge 275 cubic feet per second into Miners Ranch Conduit. A regulating outlet shall be provided that will permit the discharge of 60 cubic feet per second or any lesser flow at a uniform rate when the reservoir is at the minimum operating storage level. In addition to the regulating outlet, a pipe and gate valve of not less than three-foot diameter shall be installed near streambed level for construction and future unwatering use.

(i) *Miners Ranch Reservoir*.—Miners Ranch Dam shall be situated in Section 18, Township 19 North, Range 5 East, M.D.B. & M. The reservoir shall have useful storage of not less than 600 acre feet above the common minimum operating level for both power and irrigation use. The invert at the downstream end of the tunnel discharging into Miners Ranch Reservoir shall be not less than 15 feet below the maximum operating level of the reservoir. An ungated spillway shall be provided with crest at a level two feet higher than maximum normal water surface level. A power operated irrigation outlet shall be provided. The outlet valve shall be float-controlled to maintain any desired water level in the irrigation canal upstream from a Parshall Flume.

B-2. Flow Tunnels and Flow Tunnel Intakes

(a) *General for Diversion Tunnel Intakes*.—Intakes shall be located adjacent to the dams and shall be pro-

vided with a trashrack and a power operated tunnel intake gate. A minimum of 40 feet of concrete-lined tunnel shall extend downstream from the intake.

(b) *General for All Flow Tunnels*.—The grade and capacity of the tunnels shall be based on an unlined tunnel with the value of Manning's "n" assumed at not less than 0.030 for the design area and on the basis of the tunnel flowing full. Where lined sections are required, they shall be proportioned to give less head loss than unlined sections. Lining shall be required where (1) permanent supports are used, (2) cracks or seams that may cause rock falls exist, or (3) rock conditions are not suitable for a permanently unlined tunnel section. Vehicle access into the tunnels at one end and personnel and supply access at the other shall be provided to permit inspection and maintenance.

(c) *South Fork Diversion Tunnel*.—The capacity shall be not less than 260 cubic feet per second when Sly Creek Reservoir is at maximum storage level, and water level at South Fork Diversion Dam is one foot below the spill crest. The tunnel invert at Sly Creek Reservoir shall be 35 feet below maximum storage level of Sly Creek Reservoir to permit diversion of flows greater than 260 cubic feet per second when Sly Creek storage is less than maximum.

(d) *Slate Creek Diversion Tunnel*.—The capacity shall be not less than 600 cubic feet per second when Sly Creek Reservoir is 20 feet below the maximum storage level and water level at Slate Creek Diversion Dam is one foot below the spill crest. The tunnel invert at Sly Creek Reservoir shall be 35 feet below maximum storage level of Sly Creek Reservoir.

(e) *Miners Ranch Conduit Tunnels*.—The capacity shall be not less than 275 cubic feet per second and shall conform to the requirements of Paragraph B-15.

B-3. Power Intakes and Tunnels

(a) *General for All Power Intakes*.—Intakes with power operated gates and with trashracks of suitable area and bar spacing shall be provided for all power tunnels. Provision shall be made for convenient and efficient cleaning of trashracks. Main gates shall be capable of opening or closing under maximum unbalanced pressure. Where valves are not installed at the upper end of penstocks, the main intake gates must close automatically when the flow exceeds 110 percent to 120 percent of the normal peak flow in the tunnel. Automatic closure of all gates shall be alarmed at Woodleaf powerhouse.

(b) *General for All Power Tunnels*.—Tunnels shall be designed to withstand the full head which will be imposed on them and shall be lined (1) in all locations where permanent supports are used, (2) in locations where cracks or seams might permit leakage or cause rock falls, or (3) where rock conditions are not suitable for a permanently unlined pressure tunnel section. Adits, if used, shall have a fully grouted plug, and tunnel lining shall be provided adjacent to the adit as necessary to minimize leakage and prevent blowouts. The plug shall be a minimum of 25 feet long and shall be provided with an access door not less than 7 feet by 7 feet in dimension. Vehicle access into each tunnel shall be provided at the downstream portal, and personnel and

supply access shall be provided at the intake in order to permit inspection and maintenance. The physical tunnel grade shall be established so that the hydraulic grade line will be at a safe level above the tunnel and penstock assuming a fully unlined tunnel of roughness corresponding to a value of Manning's "n" of not less than 0.035 on the design section and for the condition of a full power load demand plus 10 percent as described under Paragraph B-4. The tunnel sizes specified in subsequent paragraphs are the design sizes and are for unlined sections of horseshoe shape having horizontal inverts and vertical walls to the spring line. Concrete lined sections shall be of a dimension and shape having less head loss than the unlined section with a roughness of the lined section assumed equal to a value of Manning's "n" of 0.015. Transition from lined to unlined sections shall be gradual in order to minimize transition losses. A minimum length of 50 feet of lined section is required downstream from the intake. Unlined tunnel sections having equivalent or better hydraulic properties may be used in place of those specified. At the penstock portals, steel lining is required at least to the point where the depth of ground cover equals the static head. Other steel or reinforced concrete lining shall be used as necessary. A rock and sand storage trap shall be installed at the lower end of each tunnel in order to prevent rock and sand from reaching the penstocks. A 10-inch diameter pipe, for the purpose of draining or removing sand from the trap, shall be embedded in the concrete lining of the tunnel from the trap to a valve and discharge pipe located at the portal. No unlined tunnel or unlined surge tank shall be used between the storage traps and the penstocks.

(c) *Woodleaf Tunnel*—The unlined section shall be not smaller than a 12-foot by 12-foot horseshoe, and the invert at intake shall be not higher than elevation 3230. The design capacity shall be 585 cubic feet per second.

(d) *Forbestown Tunnel*—The unlined section shall be not smaller than an 11-foot by 11-foot horseshoe, and the invert at intake shall be not higher than elevation 1750. The design capacity shall be 475 cubic feet per second.

(e) *Kelly Ridge Tunnel*—The unlined section shall be not smaller than a 9-foot high by 8-foot wide horseshoe, and the invert at intake shall be not higher than elevation 864.

B-4. Surge Tanks

(a) Surge tanks shall be located at or near the upper end of all penstocks.

(b) Surge tanks shall be of non-spilling design and of sufficient diameter to stabilize the water surface in the tank during plant operation.

(c) The tanks shall permit acceleration from zero flow to 110 percent of power plant design flows, and shall permit deceleration of flows from 110 percent of power plant design flows to zero flow. The tanks shall be adequate for the foregoing flow changes occurring in a period of one minute.

(d) In all cases, both for acceleration and deceleration of water, the surge tanks shall be adequate to care for flow changes occurring within the time specified or longer period of time. Valves located downstream from each surge tank shall be adjusted to closing

times which will not create surges in the tank greater than those caused by the foregoing flow changes.

(e) For the specified flow and acceleration conditions, the tanks shall be suitable for conditions of minimum operating water surface at forebay or reservoir assuming high friction values. For deceleration conditions, the tanks shall be suitable for conditions of maximum operating water surface at forebay or reservoir assuming low friction values. Conservatively long lengths of lined tunnel shall be assumed for the design of surge tanks.

B-5. Penstocks

(a) *General for All Penstocks*—The design and fabrication of penstocks shall conform to "The American Society of Mechanical Engineers Rules for Construction of Unfired Pressure Vessels", 1956 Edition, as amended through 1958, except where it may differ from the following requirements and limitations. Pressures for the design of penstocks shall include proper allowance for surge and water hammer. In any event, the allowance for water hammer shall be not less than 10 percent of the maximum static pressure at the turbine diminishing linearly in proportion to the developed length of the water column to zero at the maximum static water level in the surge tank. All longitudinal and circumferential welded penstock joints shall be double butt-welded and radiographed. The fully fabricated units containing welding shall be stress-relieved. Field welding on penstocks shall not be permitted. Penstock stress shall not exceed one-fourth the ultimate stress with welds assumed to be 100 percent efficient. The interior of all penstocks shall be shop-coated with hot coal tar enamel and application on all straight sections shall be by the spinning process. In establishing the head losses in sub-headings (b) (c) and (d) following, the interior roughness of coal tar lining shall be assumed to correspond to a value of Manning's "n" of .011. Penstock piers and anchors shall rest on bedrock where feasible. Where anchors or piers are located on erodable material, the penstock trench shall be gunited or concreted to preclude any possibility of undermining the piers or anchors.

(b) *Woodleaf Penstock*—The Woodleaf Penstock shall be so proportioned that the head loss between the downstream portal of the tunnel and the turbine shall not exceed 16 feet when delivering 475 cubic feet per second to the Woodleaf turbine. A penstock shutoff valve shall be installed at or immediately below the tunnel portal. This valve shall be arranged so that it may be operated from the powerhouse for closing only and so that it may be adjusted to trip automatically upon a 10 to 20 percent increase above normal operating flows. The installation shall be equipped with appurtenant features such as bypass valves, air valves or standpipes, and drains.

In order to provide water to Forbestown Ditch, two tees shall be installed in Woodleaf Penstock and located upstream from the penstock shutoff valve. One tee shall be provided with a branch conduit, valve and structure to deliver 50 cubic feet per second into Forbestown Ditch. The other tee shall be provided with a blind flange so that at some future date an additional 60 cubic feet per second may be diverted from the penstock at this point. The hydraulic design shall provide for a total of 110 cubic feet per second release to Forbestown Ditch when

Woodleaf plant is operating at full capacity and Lost Creek Reservoir is at elevation 3268. Discharge to Forbestown Ditch shall be float-controlled from the water surface in the Forbestown Ditch.

(c) *Forbestown Penstock*—The Forbestown Penstock shall be so proportioned that the head loss between the downstream portal of the tunnel and the turbine shall not exceed five feet when delivering 475 cubic feet per second to the Forbestown Turbine.

(d) *Kelly Ridge Penstock*—The Kelly Ridge Penstock shall be so proportioned that the head loss between the downstream portal of the tunnel and the turbine shall not exceed 20 feet when delivering 200 cubic feet per second to the Kelly Ridge Turbine.

B-6. Power Plant Installation

(a) *General for All Power Plants*—Each plant shall be capable of starting and operating, for the purpose of testing transmission lines, without being connected to or dependent upon the transmission system constructed by Pacific pursuant to this contract.

(b) *Woodleaf Power Plant*—The plant shall have an installed capacity that will generate not less than 30,800 kilowatts at an effective head of 1456 feet with water use of not more than 475 cubic feet per second.

(c) *Forbestown Power Plant*—The plant shall have an installed capacity that will generate not less than 27,800 kilowatts at an effective head of 788 feet with water use of not more than 475 cubic feet per second.

(d) *Kelly Ridge Power Plant*—The plant shall have an installed capacity that will generate not less than 9,050 kilowatts at an effective head of 619 feet with water use of not more than 200 cubic feet per second.

B-7. Turbines and Related Equipment

(a) *General for All Turbines and Related Equipment*—All turbines and related equipment, including but not limited to turbine shutoff valves, pressure regulators and governors shall be equal in completeness of features and in quality of design and materials in all respects to recent installations in Pacific's Kings and Feather River projects. Spare parts for turbines and related equipment shall be provided to the same extent as in Pacific's said recent installations.

(b) *Woodleaf Turbine*—The turbine shall be of the vertical shaft, multi-nozzle impulse type. It shall deliver not less than 71,000 horsepower at an effective head of 1443 feet when passing not more than 487 cubic feet per second. The turbine shall be designed to pass an expected flow of 525 cubic feet per second at the specified effective head.

(c) *Forbestown Turbine*—The turbine shall be of the vertical Francis type. It shall deliver not less than 39,000 horsepower at an effective head of 795 feet when passing not more than 480 cubic feet per second. The turbine shall be designed to pass an expected flow of 520 cubic feet per second at the specified effective head. The turbine shall be provided with a pressure regulator capable of continuous bypass of not less than 100 percent of turbine discharge capacity under maximum turbine output. The regulator shall be mechanically coupled to the turbine and shall be adjustable for either synchronous bypass or water-saving operation.

(d) *Kelly Ridge Turbine*—The turbine shall be of the vertical Francis type. It shall deliver not less than 13,000 horsepower at an effective head of 628 feet when passing not more than 205 cubic feet per second. The turbine shall be designed to pass an expected flow of 225 cubic feet per second at the specified effective head. The turbine shall be provided with a pressure regulator capable of continuous bypass of not less than 100 percent of turbine discharge capacity under maximum turbine output. The regulator shall be mechanically coupled to the turbine and shall be adjustable for either synchronous bypass or water-saving operation.

B-8. Generators and Related Equipment

(a) *General for All Generators and Related Equipment*—All generators and related equipment, including but not limited to exciters, storage batteries and voltage regulators shall be equal in completeness of features and in quality of design and materials in all respects to recent installations in Pacific's Kings and Feather River projects. Spare parts for generators and related equipment shall be provided to the same extent as in Pacific's said recent installations. All generators shall be designed to withstand without damage or distortion, the forces resulting from overspeed not less than 10 percent in excess of the maximum turbine runaway speed.

(b) *Woodleaf Generator*—The rating of the generator shall be 13,800 volts, 0.90 power factor lagging, 1.10 short-circuit ratio, 60 cycles, 3-phase, 327 rpm and not less than 58,000 kva.

(c) *Forbestown Generator*—The rating of the generator shall be 11,500 volts, 0.90 power factor lagging, 1.10 short-circuit ratio, 60 cycles, 3-phase, 450 rpm and not less than 32,000 kva.

(d) *Kelly Ridge Generator*—The rating of the generator shall be 4,160 volts, 0.90 power factor lagging, 1.10 short-circuit ratio, 60 cycles, 3-phase, 720 rpm and not less than 11,000 kva.

B-9. Main Power Transformers

(a) *General for All Main Power Transformers*—All main power transformers shall be 60 cycle, oil-insulated equal in completeness of features and in quality of design and materials in all respects to recent installations in Pacific's Kings and Feather River projects. Transformers shall have full BIL (Basic Impulse Insulation Level) corresponding to their respective voltage classes and shall be provided with lightning arrestors adjacent to the high-voltage terminals. Impedances at rated kva and voltage, and within standard tolerances, shall be as follows: Woodleaf and Forbestown power plants, 10.75 percent; Kelly Ridge Power Plant, 6.25 percent.

(b) *Woodleaf Transformer*—The transformer shall be 115 kv insulation class with a three-phase bank rating of not less than 58,000 kva. The high voltage winding shall be grounded wye with the following full capacity taps:

72,170/125,000 Y
69,200/120,000 Y
66,400/115,000 Y
57,750/100,000 Y

The low voltage winding shall be 13,800 volts, delta-connected.

(c) *Forbestown Transformer*—The transformer shall be 115 kv insulation class with a three-phase bank rating of not less than 32,000 kva. The high voltage winding shall be grounded wye with the following full capacity taps:

72,170/125,000 Y
69,200/120,000 Y
66,400/115,000 Y
57,750/100,000 Y

The low voltage winding shall be 11,500 volts, delta-connected.

(d) *Kelly Ridge Transformer*—The transformer shall be 69 kv insulation class with a three-phase bank rating of not less than 11,000 kva. The high voltage winding shall be grounded wye with the following full capacity taps:

36,300/63,000 Y
35,500/61,500 Y
34,600/60,000 Y
33,700/58,500 Y
32,900/57,000 Y

The low voltage winding shall be 4,160 volts, delta-connected.

B-10. Station Power Facilities and Other Equipment

Station power facilities and all other auxiliary equipment for all *project* plants shall be equal in completeness of features and in quality of design and materials in all respects to recent installations in Pacific's Kings and Feather River projects.

The normal source of station power for each plant shall be from the generator bus. Each plant shall be provided with an emergency power supply which shall be either a standby engine-generator set or a transformer bank connecting to a reliable distribution circuit.

Oil circuit breakers shall be provided with overhead structure and disconnects to which Pacific's transmission lines will be connected.

Adequate facilities shall be installed for modern relay protection of the transmission lines constructed by Pacific pursuant to this contract.

B-11. Communication Facilities

Adequate communication facilities shall be provided to insure reliable and efficient operation and maintenance of the *project*. All communication facilities shall be equal in completeness of features and in quality of design and materials in all respects to recent installations in Pacific's Kings and Feather River projects. The basic communication system requirements are specified herein.

A twin-circuit, full-metallic, open-wire telephone line, supported by not less than 30 poles per mile, with a minimum number of power circuit exposures of three-phase balanced loading and not greater than 2300 volts, shall be provided from Kelly Ridge Powerhouse to Woodleaf Penstock Valvehouse via Kelly Ridge Tunnel Portal, Kelly Ridge Tunnel Intake, Miners Ranch Reservoir, Miners Ranch Conduit, Ponderosa Dam, Forbestown Powerhouse, *project headquarters*, Woodleaf Afterbay Dam, and Woodleaf Powerhouse. The alignment shall be adjacent to roads wherever practicable. These circuits will carry terminal and way-station voice communications with carrier channels for alarms, telemetering, and control. Both circuits shall be connected at all terminal and

way stations, and tap circuits shall be limited to not more than one-quarter mile in length. An additional circuit shall be provided between Miners Ranch Reservoir and Kelly Ridge Powerhouse. All terminal and way-station equipment connected to open-wire circuits shall be fully protected against lightning damage.

A duplex power line carrier shall be provided on the 110 kv line between Woodleaf Powerhouse and Pacific's Palermo Substation for voice communication. A duplex power line carrier shall be provided on the 60 kv line between Kelly Ridge Powerhouse and Pacific's Oroville Substation for voice communication. Carrier coupling equipment shall be provided for single phase-to-ground coupling on the line side of station disconnect and ground switches. Line traps shall be provided at Kelly Ridge Powerhouse, Forbestown Powerhouse and Woodleaf Powerhouse to isolate the station buses. Pacific shall provide the carrier equipment at Palermo and Oroville substations for operation of these *project* channels.

All *project* voice channels and physical lines shall operate as magneto circuits. Termination equipment at Kelly Ridge Powerhouse, Forbestown Powerhouse, *project headquarters* and Woodleaf Powerhouse shall include a 10-line patch panel for circuit interconnection, a 10-line double bus key box, and Secode-type selectors for reception of coderinging. Kelly Ridge Powerhouse and Forbestown Powerhouse shall be equipped for 5 magneto circuits. *Project headquarters* and Woodleaf Powerhouse shall be equipped for 10 magneto circuits.

A mobile radio system shall be provided for voice communication from Woodleaf Powerhouse and *project headquarters* to *project* vehicles and personnel at all operating points of the *project*. A base radio station site shall be developed for the mobile system and shall be provided with standby power and carrier facilities to Woodleaf Powerhouse and *project headquarters* for control of the base station and relaying of mobile signals.

Commercial telephone service shall be provided at Kelly Ridge Powerhouse, Forbestown Powerhouse, Woodleaf Powerhouse, and *project headquarters* in the town of Forbestown.

All communication equipment shall be covered by separate specifications and shall be furnished with the manufacturer's recommended test equipment and spare parts for routine and major maintenance. Wherever possible, integral systems shall be from the same manufacturer; however, responsibility for correct operation shall be assigned to all manufacturers supplying equipment for integral systems. Specifications shall include requirements for field acceptance tests.

B-12. Automatic Power Plant Facilities

(a) *General for All Project Power Plants*—The control, metering, protective and alarm systems for all *project* plants shall be equal in completeness of features and in quality of design and materials in all respects to recent installations in Pacific's Kings and Feather River projects. All plants shall be designed for both full automatic and manual operation with transfer means to select either. Normal operation will be under automatic control. Alarm signals shall be transmitted by separate carrier channels to Woodleaf Powerhouse via metallic circuits.

(b) *Woodleaf Power Plant*—Facilities shall be installed at Woodleaf Power Plant for receiving the alarms from Kelly Ridge and Forbestown plants and other *project* alarms and telemetered quantities.

Woodleaf Power Plant will normally operate at a selected fixed output, but shall be provided with an over-riding float control equipped with a cutout switch from the Woodleaf Afterbay so as to limit automatically the afterbay water level to a pre-selected and adjustable maximum level. The float control shall not interfere with the full and free operation of the governor so that the unit, when detached from the system at the powerhouse or at a remote point, may maintain close frequency regulation on the load being supplied.

Control, communication and alarm channels shall be provided to the penstock valvehouse. Control and alarms shall be via carrier.

(c) *Forbestown Power Plant*—Forbestown Power Plant normally shall be float-controlled by the Woodleaf Afterbay water level. The plant load shall be so controlled as to maintain automatically the Woodleaf Afterbay water level within a pre-selected and adjustable range. The float controls shall automatically transfer from the turbine to the pressure regulator to maintain flow at the plant if the required flow through the turbine is interrupted for any reason. The float control shall not interfere with the full and free operation of the governor so that the unit, when detached from the system at the powerhouse or at a remote point, may maintain close frequency regulation on the load being supplied. The water level transmitting device shall be located at Woodleaf Afterbay and water level signals shall be transmitted to Forbestown Power Plant via carrier. Separate alarm indications shall be transmitted to Woodleaf Powerhouse for, but not limited to, the following: (a) unit shutdown or unit separation and (b) miscellaneous station alarms.

(d) *Kelly Ridge Power Plant*—Kelly Ridge Power Plant normally shall be float-controlled by Miners Ranch Reservoir water level and with provision for peaking by time clock control when water is available. The plant load shall be so controlled as to maintain automatically the Miners Ranch Reservoir water level within a pre-selected adjustable range. The float controls shall automatically transfer from the turbine to the pressure regulator to maintain flow at the plant if the required flow through the turbine is interrupted for any reason. The float control shall not interfere with the full and free operation of the governor so that the unit, when detached from the system at the powerhouse or at a remote point, may maintain close frequency regulation on the load being supplied. The water level transmitting device shall be located at Miners Ranch Reservoir and water level signals shall be transmitted to Kelly Ridge Powerhouse over a separate circuit. Separate alarm indications shall be transmitted to Woodleaf Powerhouse for, but not limited to, the following: (a) unit shutdown or unit separation and (b) miscellaneous station alarms.

B-13. Gages and Meters

(a) *Reservoir Water Levels*—Staff gages shall be provided at all reservoirs. Water level recorders shall be installed for all reservoirs except South Fork Diversion and Slate Creek Diversion reservoirs. Pressure devices may

be used at Little Grass Valley and Sly Creek reservoirs. All other reservoir level records shall be obtained from suitable recorders and float wells. Woodleaf Afterbay, Ponderosa Reservoir, and Miners Ranch Reservoir water levels shall be transmitted continuously to Woodleaf Powerhouse. Lost Creek Reservoir water level shall be transmitted to Woodleaf Powerhouse on a one-half hour time schedule. Water level alarms shall be transmitted to Woodleaf Powerhouse from Woodleaf Afterbay, Ponderosa, Miners Ranch and Lost Creek reservoirs and shall be derived from and indicated independently of water level telemetering devices.

(b) *Stream Flow*—The following itemized stations, and recorders shall be installed to measure releases from reservoirs. Additional records may be required by the Federal Power Commission. Stations shall be located immediately downstream from the locations specified below. The recorders shall be located at sites which will provide consistent and accurate measurement in the full range of expected flows.

- (1) Little Grass Valley Dam
- (2) South Fork Diversion Dam
- (3) Slate Creek Diversion Dam
- (4) Lost Creek Dam
- (5) Woodleaf Afterbay Dam
- (6) Ponderosa Dam

(c) *Conduit Flow*—Recorders, with associated staff gages where applicable, shall be installed to provide continuous record of flow in:

- (1) South Fork Diversion Tunnel
- (2) Slate Creek Diversion Tunnel
- (3) Forbestown Ditch at the point of diversion
- (4) Woodleaf Penstock downstream from the Forbestown Ditch diversion
- (5) Forbestown Penstock
- (6) Miners Ranch Conduit near the intake (Flow level shall be transmitted continuously to Woodleaf Powerhouse.)
- (7) Miners Ranch Conduit near the upstream portal of the tunnel leading to Miners Ranch Reservoir
- (8) Irrigation and domestic diversion or diversions which take water from Miners Ranch Reservoir (Measurements shall be at or near the points of diversion.)
- (9) Kelly Ridge Penstock

Parshall Flumes shall be used where applicable.

(d) *Power Plant Meters*—In addition to the normal installation of transmission and generator meters, the following installations shall be made at each plant:

- (1) Meters for recording delivery of power from the *project* to Pacific at the low tension side of the main transformer banks with provision for adjustment to equivalent values at the high tension delivery point
- (2) Recording wattmeter and recording voltmeter at point of metering
- (3) At the point of metering, watthour meters for registration of plant delivery to transmission, for registration of any delivery from transmission to the generator bus, and for registration of *project power plant use*

B-14. Efficiency and Performance Tests

A complete testing and checking program shall be outlined and scheduled well in advance of the delivery of first power. The program shall include checks on equipment guarantees and general checking of all components of plants and facilities and the interrelated functions of the various facilities. All tests and checks shall be thoroughly documented and included in a comprehensive test report so that the proper functioning of all facilities and equipment under all normal and emergency operating conditions shall be known and so that the necessary information will be available for proper operation of the project. Performance and efficiency tests shall be made by Oroville in the presence of Pacific's representatives within six months of delivery of first power at each of the three power plants. Measurement of water shall be by either the Gibson or Allen Salt Velocity method. All records obtained in all tests and checks shall be made available to Pacific.

B-15. Miners Ranch Conduit

The conduit shall consist of a gunite-lined canal, flumes, siphons and tunnels as needed from Ponderosa Dam to the Southwest Quarter, Section 2, Township 19 North, Range 5 East, M.D.B.&M. The capacity shall be 275 cubic feet per second with adequate freeboard. The remaining length to Miners Ranch Reservoir shall consist of tunnel.

The intake gate shall be controlled from Woodleaf Powerhouse and shall be designed to discharge 275 cubic feet per second to the conduit when Ponderosa Reservoir is at minimum operating level. It shall be provided with a trashrack. Downstream from the intake gate and tunnel, a float-controlled radial gate and a Parshall Flume shall be provided. The radial gate shall limit the flow to an adjustable level between 200 and 275 cubic feet per second. The control section water level shall be continuously transmitted to Woodleaf Powerhouse.

Tunnels shall conform to paragraph B-2(b), except that the design capacity of the tunnel discharging into Miners Ranch Reservoir shall be based on a water surface four feet below the maximum operating level of Miners Ranch Reservoir. A trashrack with means for convenient cleaning shall be located at each upstream portal.

Open conduits shall be provided with wasteways not more than 3 miles apart. These wasteways shall permit discharge of the full conduit flow from the conduit into a wasteway channel suitable for conveying such flow. One of these wasteways shall be located at the upstream portal of the tunnel leading to Miners Ranch Reservoir and shall be automatically controlled to shut off and waste the canal flow when the water in Miners Ranch Reservoir rises above any specified level in the operating range. All wasteways shall be equipped with sediment traps and sluicing facilities to remove material collected in the traps.

A sediment trap and a sluicing valve shall be provided at the bottom of each inverted siphon. If the valve is to be used as a wasteway it shall be of sufficient size to discharge the full conduit flow. A trashrack, with means for convenient cleaning, shall be provided at the entrance to each inverted siphon.

In addition to the wasteways, provision shall be made to remove excess flow in the conduit resulting from side-

stream and hillside inflow or otherwise. The facilities for removing excess flow shall have a discharge capacity of not less than 10 cubic feet per second each and shall be located at not less than three-mile intervals. They shall be adjustable and shall operate automatically when the conduit water surface rises above any specified level. Adjustable siphons will be satisfactory for this service.

High and low water surface alarms shall be installed at appropriate locations so as to provide warnings of conduit breaks or excess flow. These alarms shall register at Woodleaf Powerhouse. Alarms also shall be provided upstream from trashracks to warn of trashrack plugging.

B-16. Permanent Roads

The following permanent roads are required and shall be constructed for satisfactory operation and maintenance of the project:

- (a) To all dams and to all tunnel intakes except Forbestown Tunnel intake
- (b) To power houses, downstream tunnel portals, and tunnel adits
- (c) To and along Miners Ranch Conduit (The canal bank shall be adapted as a road with occasional access to existing roads.)
- (d) To radio station site

All project roads except those leading to adits shall be of such construction that they can be kept passable with routine maintenance.

B-17. Housing and Buildings,

The yard level of each powerhouse shall be above maximum flood stage. The powerhouse deck of each plant shall be designed to support a temporary crane capable of lifting the shaft and rotor.

A cabin shall be provided at Little Grass Valley Dam to provide shelter and protection for personnel during winter conditions.

Project headquarters shall be constructed in the town of Forbestown to provide adequate space for warehouse, garage, office and change-room facilities. At least one dwelling shall be provided at the same location.

A radio station building of concrete blocks shall be constructed with separate rooms for electronic and engine-generator equipment.

B-18. Operation and Maintenance Tools and Equipment

Prior to completion of construction of the project, it shall be equipped with necessary and adequate machine and hand tools, vehicles, road maintenance equipment, and other equipment and supplies purchased by Oroville and required for operation and maintenance of the project.

B-19. Drawings, Specifications and Other Information

Oroville shall provide Pacific with three copies of all drawings and specifications submitted to bidders on project construction, and shall keep Pacific informed of changes and other information which may relate to the project. Within six months following completion of the project, Oroville shall provide Pacific with three copies of drawings of the project as constructed and with any other information which Pacific may request with respect to the project.

Appendix C

OPERATION AND MAINTENANCE REQUIREMENTS

The following provisions shall govern the operation and maintenance of the *project* except as otherwise may be agreed upon from time to time by the parties.

I. OPERATION

C-1. General

Oroville shall operate the project, insofar as is consistent with supplying water for domestic and irrigation purposes, in accordance with schedules, which shall be furnished from time to time by Pacific, for impounding and release and use of water through power plants of the *project* up to their full generating capabilities. Oroville shall appoint and have in charge of operations at all times a *project* manager with full authority to act for Oroville in all matters relating to the *project*. Oroville shall, consistent with the requirements of paragraph 4 of this contract, from time to time make such changes in *project* structures as may be concluded are reasonably required to improve economy of operation and shall employ only such personnel as are concluded to be reasonably necessary to operate and maintain the *project* in an economic manner. Pacific and Oroville shall exchange information necessary for effective and economic operation of the *project*.

An operator shall be headquartered at Woodleaf Powerhouse for 24-hour operation of *project* plants on a seven day per week basis. Additional personnel, together with radio-equipped vehicles, shall be provided for daily routine operation and maintenance.

Operation shall be such that the forebay water levels shall be kept at maximum levels consistent with schedules for water releases. Operation shall be such that spilling at each dam shall be kept to a minimum.

C-2. Specific Requirements for Diversion of Water on and After the Full Operation Date

(a) Within the limits of the total water on the *project* watershed, Oroville shall have available from Woodleaf Penstock for delivery to Forbestown Ditch up to but not in excess of the following amounts of water in acre feet for use by Oroville and Yuba County Water District, hereinafter called "Yuba":

	For Oroville	For Yuba	Total
Jan.	369	0	369
Feb.	334	0	334
Mar.	553	0	553
April	1009	181	1190
May	1285	437	1722
June	1369	714	2083
July	5801	738	8169
Aug.		738	
Sept.		595	
Oct.		297	
Nov.		0	
Dec.	0	0	

The foregoing amounts may be taken at a maximum rate of 12 cubic feet per second for Yuba and 38 cubic

feet per second for Oroville; provided, that upon the completion of Yuba's proposed diversion from Canyon Creek, the maximum rate of diversion for Yuba shall not exceed 72 cubic feet per second.

In addition to the amounts set forth in the above table, and at times when Lost Creek Reservoir is spilling and stream flow to the reservoir is in excess of the constructed diversion capacity of Woodleaf Power Plant, Oroville shall have the right to divert to Forbestown Ditch up to 50 cubic feet per second of such excess including scheduled water diverted for Yuba. Oroville also shall be entitled to divert "surplus water", as defined in subparagraph 4 of paragraph C of Part II of the *Yuba Agreement*.

Diversions made under the foregoing paragraphs shall not exceed a total rate of flow of 110 cubic feet per second.

In the event that (a) Oroville increases its diversion for domestic or irrigation purposes in any season from Oroleve Creek and other sources into the Forbestown Ditch below its intersection with said creek beyond the amounts which, prior to January 1, 1958, have been so diverted and (b) such increased diversion reduces the amount of water which otherwise would be used at Kelly Ridge Power Plant, Oroville shall pay Pacific \$1.50 for each acre foot of such water.

In the event of an outage of Miners Ranch Conduit to such an extent that Oroville is compelled to make emergency draft from Lake Wyandotte storage, Oroville may thereafter deliver water, in addition to the foregoing scheduled amounts, from Woodleaf Penstock to Forbestown Ditch to restore the quantity of such emergency overdraft as rapidly as consistent with available conveyance capacity; provided, that the additional water shall be taken only at times when the total storage in *project* reservoirs equals or exceeds the following amounts of water in acre feet.

End of	Gross storage for all reservoirs (Little Grass Valley, Sly Creek and Lost Creek)	Little Grass Valley Reservoir
January	82,000	52,800
February	81,000	57,800
March	110,000	64,200
April	146,400	81,800
May	163,300	92,900
June	159,000	88,400
July	140,500	70,100
August	122,000	56,000
September	102,300	52,400
October	93,400	50,800
November	89,300	50,500
December	84,200	50,200

For such additional water Oroville shall pay Pacific \$7.10 per acre foot.

(b) Within the limits of total water on the *project* watershed, Oroville shall have available to it at Miners Ranch Reservoir up to but not more than the following amounts of water in acre feet:

the day 6/70

	For Yuba	— For Oroville During —	
		First Period	Second Period
January	0	615	615
February	0	555	555
March	0	615	615
April	181	1485	2199
May	492	2890	4244
June	893	4046	5950
July	922	5288	7686
August	922	5288	7686
September	714	5058	7319
October	376	3006	4360
November	0	595	595
December	0	615	615

The foregoing amounts for Oroville may be taken at rates to be agreed upon but not to exceed 86 cubic feet per second during the first period, nor to exceed 125 cubic feet per second during the second period. The amounts for Yuba may be taken at a maximum rate of 16 cubic feet per second.

At any time when water available at Miners Ranch Reservoir would otherwise be wasted because it exceeds the amount necessary to operate Kelly Ridge Power Plant continuously at its full capability and to supply the foregoing scheduled amounts, Oroville may use such excess.

Upon the giving of written notice two years in advance by Oroville to Pacific, the amounts specified for either period in the foregoing table, and rates of flow, for Oroville may be proportionately increased in the period from April through October up to a total increase not to exceed 26,000 acre feet. The amounts as so increased shall not be reduced throughout the remaining term of the contract. Oroville shall pay Pacific \$6.10 for each acre foot in excess of the amounts specified in said table for the first period and \$8.00 for each acre foot in excess of the amounts specified in said table for the second period.

If and when reservoir capacity is constructed to store water to be diverted at Miners Ranch Reservoir, Oroville may divert such additional water as may be necessary to meet the requirements of Paragraph C of Part V of the Yuba Agreement. When necessary in order to assist Oroville to meet said requirements, Oroville may divert water which otherwise could be used at Kelly Ridge Power Plant; provided, that such diversion will not at any time reduce the capacity factor of said plant to less than 50 percent.

(c) Within the limits of total water on the project watershed, Oroville shall have available to it for diversion to Palermo Canal up to but not more than the following amounts of water in acre feet:

January	615	July	2460
February	555	August	2460
March	615	September	2380
April	1190	October	1230
May	2460	November	595
June	2380	December	615

The foregoing amounts may be taken at a maximum rate of 40 cubic feet per second.

In addition to the foregoing amounts, Oroville may ... which otherwise would spill past its

Palermo Canal Diversion Dam in excess of the amounts provided for in subparagraph B, of paragraph C-3.

(d) In the event Oroville Dam or alternate impounding reservoir is constructed, Oroville shall voluntarily release to the South Fork of the Feather River at Ponderosa Dam not more than the following amount of water: the amount supplied to Palermo Canal from the said impounding reservoir not in excess of the amounts provided for in subparagraph (c) above, less 120 percent of the natural flow of Sucker Run.

C-3. Limitations on Water Releases

A. After November 30, 1961, and prior to the full operation date, whenever the minimum amounts of water required in Appendix D are not in storage, Oroville voluntarily shall release to the stream or divert water only at the several points of diversion, for the purposes and in amounts not exceeding those specified below:

- (1) *At Little Grass Valley Dam and at South Fork Diversion Dam and Forbestown Power Plant Diversion Dam*
 - (a) *For the support of fish and wild life and for recreation*
 May through October, 10 cubic feet per second, reducing to five cubic feet per second in dry years
 November through April, five cubic feet per second
 - (b) *For prior rights at Palermo Canal Diversion Dam*
 The amount needed from natural flow to meet the requirements of prior rights under subparagraph 4(a) of this section
- (2) *At Slate Creek Diversion Dam*
 - (a) *For the support of fish and wild life and for recreation*
 The natural flow up to 10 cubic feet per second throughout the year with no reduction in dry years
 - (b) *For prior rights at Bullards Bar*
 The entire natural flow whenever Bullards Bar Reservoir is not full or the natural flow of North Fork of Yuba River at Bullards Bar is less than the existing diversion capacity of Pacific's Bullards Bar Power Plant
- (3) *At Lost Creek Dam to Forbestown Ditch from natural flow, and also not to exceed a total of 5,700 acre feet from the combined storage in Sly Creek and Lost Creek reservoirs*
 - (a) *For uses under Oroville's diversion rights*

Jan.	610 acre feet	July	2460 acre feet
Feb.	560 acre feet	Aug.	2460 acre feet
Mar.	610 acre feet	Sept.	2380 acre feet
Apr.	1190 acre feet	Oct.	1540 acre feet
May	2460 acre feet	Nov.	600 acre feet
June	2380 acre feet	Dec.	610 acre feet
- (4) *At Palermo Canal Diversion Dam from natural flow, and also not to exceed a total of 5,700 acre feet from the combined storage in Sly Creek and Lost Creek reservoirs*

(a) *For uses under Oroville's diversion rights*

Jan. 610 acre feet	July 1900 acre feet
Feb. 560 acre feet	Aug. 1900 acre feet
Mar. 610 acre feet	Sept. 1850 acre feet
Apr. 1190 acre feet	Oct. 1230 acre feet
May 1900 acre feet	Nov. 600 acre feet
June 1850 acre feet	Dec. 610 acre feet

(b) *For the support of fish life and for recreation*
October through April, 15 to 20 cubic feet per second, reducing to 10 cubic feet per second in dry years

The gaging stations to measure the releases under subparagraphs (1) and (2) above shall be operated under the supervision of the United States Geological Survey Water Resources Division, Surface Water Branch.

Measurements of releases under subparagraphs (3) and (4) above shall be made in the same manner as those recorded by the United States Geological Survey Water Resources Division, Surface Water Branch, in 1958.

B. After the *full operation date*, Oroville shall limit the voluntary release of water to the stream for the purpose of supporting fish and wild life and for recreation to the following amounts at the several points of diversion:

- (1) *At Little Grass Valley Dam, South Fork Diversion Dam and Forbestown Power Plant Diversion Dam*
May through October, 10 cubic feet per second, reducing to five cubic feet per second in dry years
November through April, five cubic feet per second
- (2) *At Slate Creek Diversion Dam*
The natural flow up to 10 cubic feet per second throughout the season with no reduction in dry years
- (3) *At Ponderosa Dam*
May through September, 30 cubic feet per second, reducing to 20 cubic feet per second in dry years
October through April, from 15 cubic feet per second to 20 cubic feet per second, reducing to 10 cubic feet per second in dry years
- (4) *At Palermo Canal Diversion Dam*
May through September, none required
October through April, from 15 cubic feet per second to 20 cubic feet per second, reducing to 10 cubic feet per second in dry years
Releases for the support of fish and wild life at Ponderosa and Palermo dams shall be discontinued after the proposed Oroville Dam of the State of California, or equivalent, is constructed.

In the foregoing subparagraphs A and B, a dry year is defined as one in which the unimpaired seasonal runoff of the South Fork of Feather River at Enterprise, as estimated on May 1 by the agency responsible for such estimates, is 117,000 acre feet or less. If no such estimate is available, such runoff shall be estimated by the parties.

C. After the *full operation date*, Oroville shall release the entire natural flow at Slate Creek Diversion Dam whenever Bullards Bar Reservoir is not full or the

Note that PG&E's records do not want and reservoir was later abandoned and flooded by the Yuba River project. Thus natural flow of North Fork of Yuba River at Bullards Bar is less than the existing diversion capacity of Pacific's Bullards Bar Power Plant.

C-4. *Miners Ranch Reservoir*

After the *full operation date*, 400 acre feet of Miners Ranch storage shall be used for power production during the period from September 30 through June 1, and 200 acre feet for the balance of the year. The balance of the storage shall be available for use for irrigation and domestic purposes. To the fullest extent practicable, Oroville shall so regulate the flow to Miners Ranch Conduit at Ponderosa Reservoir as to maintain maximum storage at Miners Ranch Reservoir.

II. MAINTENANCE

C-5. *Scheduling*

Oroville shall notify Pacific of contemplated maintenance work which would affect operation of the project and shall cooperate with Pacific in scheduling the work by advancing or postponing the time of performance so as not unnecessarily to cause power loss or inconvenience to Pacific. Such maintenance work shall be completed in the shortest possible time and, if requested by Pacific, shall be performed on a 24-hour work-day basis, including Sundays and holidays.

C-6. *Inspections*

Oroville shall make such inspections, investigations and tests, both routine and extraordinary, as are called for by the best engineering and operating practice and shall afford Pacific full opportunity to inform itself as to the condition of the project and the elements thereof by giving Pacific notice and opportunity to join with Oroville in inspections, investigations and tests, by submission to Pacific of copies of reports as to the results thereof and by giving Pacific access to Oroville's properties for the purpose of any inspections, investigations and tests which Pacific may desire to perform independently of Oroville. Pacific shall be given full opportunity to inspect the performance of any maintenance work on the project by Oroville, its employees, agents, and contractors.

III. PERFORMANCE BY PACIFIC

C-7. *Operation and Maintenance*

Oroville shall have no obligation to perform under this appendix or to operate or maintain the project pursuant to paragraphs 3 and 4 of this contract or to repay any sums paid by Pacific or interest thereon, except to the extent that Oroville can do so with money received from payments made by Pacific pursuant to paragraph 9(b) of this contract and with money deposited in the operation and maintenance fund pursuant to paragraph C-10. At any time when the operation and maintenance fund is exhausted and moneys received by Oroville under paragraph 9(b) of this contract are insufficient to pay the operation and maintenance costs of the project, Pacific shall pay Oroville each month such additional sums as may reasonably and necessarily be required to pay such costs; provided, that in lieu of making such additional payments, or in the event that Oroville fails or is unable to operate or maintain the project or any of the units

thereof in accordance with this contract, Pacific may, upon reasonable notice to Oroville, which may be 24 hours or less in case of urgency, enter upon, operate and maintain the *project*, or such units thereof as may be necessary, for and on behalf of Oroville, but at Pacific's own cost and expense. In such event, Oroville hereby employs Pacific to act as such operator, and hereby consents and agrees that Pacific may enter upon the *project* and act as such operator, until Oroville shall provide satisfactory assurance that it is able to and will perform satisfactory operation and maintenance of the *project*. Pacific's determination as to the necessity for, and manner of, operation or maintenance, and as to the amount of expenses incurred hereunder, in the event Pacific shall take over such operation, shall be conclusive in the absence of bad faith.

IV. OPERATION AND MAINTENANCE FUND

C-8. Establishment of Fund

To provide assurance of proper operation and maintenance of the *project*, and to enable performance of the obligations provided for in this appendix and in paragraphs 3 and 4 of this contract, Oroville shall establish and maintain an operation and maintenance fund under a trust agreement with a trustee chosen by mutual agreement of the parties hereto.

C-9. Trustee

The Trustee shall be a bank or trust company authorized to do and doing business in the State of California and having capital and surplus and undivided profits of at least \$60,000,000.

C-10. Deposits

Oroville shall deposit immediately in said fund (a) one-half of all moneys received under paragraph 8 of this contract; (b) all moneys received under paragraph 9(a) of this contract prior to July 1, 1965 and all moneys received in lieu thereof from insurance and liquidated damages paid by the construction contractor, less the following items: (i) a premium, if paid, for early completion of construction of the *project*, not to exceed \$1,400,000 and (ii) the amounts required to pay interest charges accruing on *project bonds* from and after July 1, 1963 and prior to July 1, 1965; (c) all moneys obtained from proceeds of *project bonds* (excepting refunding bonds), and income earned on investment thereof, remaining after the payments provided for in paragraphs A-1 and A-2(a), Part IV of the *Yuba Agreement*; (d) on each January 1 and July 1, beginning on January 1, 1966, (i) all moneys received under paragraph 9(a) of this contract on the next preceding December 15 or June 15 after deducting therefrom the amount required, under the latest schedule prepared as provided below, to pay interest and retirement charges on *project bonds* on said January 1 or July 1, and also (ii) one-half of that portion of the excess, if any, of the amount (deducted as provided in the foregoing clause (i)) which, under said schedule, would have been required during the six months ending on said January 1 or July 1 for the payment of interest charges on *project bonds* theretofore retired at any time and for retirement charges on *project bonds*, over the amounts actually paid (or set aside for payment), from said moneys received under

paragraph 9(a) of this contract, during said six-month period for interest on outstanding *project bonds* and to retire the aggregate principal amount of *project bonds* required to be retired under said schedule during said period; (e) on each January 1 and July 1, any amount remaining from moneys received during the preceding six months under paragraph 9(b) of this contract after payment of costs incurred pursuant to paragraphs 3 and 4 of this contract; (f) one-half of the premiums, if any, received by Oroville from the sale of *project refunding bonds*; (g) all moneys which Oroville is entitled to receive from the Bond Trustee after all *project bonds* have been retired; (h) all moneys received by Oroville under paragraph 9(a) of this contract after all *project bonds* have been retired; (i) all moneys paid into the general fund of Oroville under paragraph A 1(b) of Part IV of the *Yuba Agreement*; (j) after the *full operation date*, all moneys received from *project* property insurance and (k) all moneys received by Oroville under paragraph C-7 of this contract.

Within 90 days after each sale of *project bonds*, the Bond Trustee shall prepare and file with Oroville and Pacific a schedule showing, in accordance with the terms and conditions under which the bonds are bought, the amount which, on each January 1 and July 1 after December 15, 1963, will pay bond interest as it accrues, maturing principal of serial bonds, if any, and required minimum sinking fund charges for payment of all term bonds by maturity.

Except as provided in this paragraph, Oroville shall have no obligation to contribute to said fund.

Notwithstanding anything contained in this paragraph Oroville may direct the Trustee to set aside in said fund any moneys received from insurance, or from liquidated damages paid by the construction contractor, and required by Oroville to meet or satisfy Oroville's obligation to Yuba as provided in paragraph B, Part IV of the *Yuba Agreement*, and such moneys so set aside shall be subject to withdrawal as provided in paragraph C-12 hereof.

C-11. Withdrawals

Withdrawals may be made from said fund only as provided in the following paragraphs.

C-12. Withdrawals by Oroville

Oroville shall be entitled to withdraw money from said fund to pay (a) the payments to Yuba provided for in paragraph B, Part IV of the *Yuba Agreement*, (b) debts incurred pursuant to paragraphs 3, 4 and C-1 of this contract, including premiums for insurance containing such deductible provisions as are agreed upon by the parties, and (c) any other charges included from time to time within the Federal Power Commission Uniform System of Accounts Prescribed for Public Utilities and Licensees, including taxes, if any, imposed on any interest which Oroville may be found to have in the *project*. Oroville shall not be entitled to withdraw money from said fund or from payments made by Pacific pursuant to paragraph 9(b) of this contract to pay (a) compensation to Oroville's officers or directors in any year exceeding \$2,000, (b) any cost or expense associated with (i) *Yuba Agreement Irrigation Works* or (ii) that portion of Miners Ranch Reservoir properly

allocable to irrigation and domestic water purposes or (c) the price of water purchased by Oroville pursuant to paragraph C-2 of this contract. For each authorized withdrawal, Oroville shall, by written certificate signed by its president or other authorized representative, certify to the trustee of said fund the amounts actually expended or owing and Pacific shall, by written certificate signed by its president or other duly authorized representative, certify to said trustee that such payment is a proper charge under this contract. Upon receipt of such certificates, said trustee shall thereupon be empowered to pay said amounts.

C-13. Withdrawals by Pacific

Pacific shall be entitled to withdraw money from said fund to pay (a) its costs of operation and maintenance incurred at any time pursuant to paragraph C-7 of this contract, calculated in accordance with Pacific's established billing procedure as outlined in Pacific's Auditing Department Circular Letter No. 947 as hereafter amended or superseded, (b) taxes, if any, imposed on any interest in the project which Pacific may be found to have under this contract and (c) interest, at a rate equal to the most recent rate of return found to be reasonable by the Public Utilities Commission of the State of California on Pacific's Electric Department rate base, on any amount owed to Pacific by said fund to reimburse Pacific for said costs or taxes; such interest shall accrue until the time when moneys are available in said fund to pay said debt. For each such withdrawal Pacific shall, by written certificate signed by its president or its authorized representative, certify to the trustee of said fund the amounts for which it is entitled to payment and Oroville shall, by written certificate signed by its president or its authorized representative, certify to said trustee that such payment is a proper charge under this contract. Upon receipt of such certificates said trustee shall thereupon be empowered to pay said amounts.

C-14. Termination

Upon the termination of this contract, all amounts remaining in said fund shall be paid to Oroville, except that any amount that Pacific may be entitled to by reason of paragraph C-13 above shall be withheld upon Pacific's certificate alone and retained until the respective rights of Oroville and Pacific shall be finally ascertained.

C-15. Reliance by Trustee

Said trustee, in all matters relating to the operation of and withdrawals from said fund shall be entitled to rely upon the certificates of Oroville and Pacific and shall not be obligated to make an independent determination of the facts certified.

C-16. Investment

Any portion of said fund may be invested in United States government securities at the direction of Oroville or in such other securities as may be agreed upon by Oroville and Pacific. All interest and other income received from such investment shall be deposited in and become a part of said fund.

C-17. Expenses of Trustees

The expenses and fees of the Bond Trustee and the expenses and fees of the trustee in connection with the handling of the operation and maintenance fund shall be paid therefrom.

C-18. Financial Statements

On each January 1 and July 1, the trustee shall submit to Oroville and Pacific an itemized account showing the current status of said fund and all disbursements made therefrom during the preceding six months. On each January 1 and July 1, Oroville shall submit to Pacific an itemized account showing all disbursements made from moneys received under paragraph 9(b) of this contract during the preceding six months.

Appendix D

**TABLE OF STORAGE REQUIREMENTS
FOR DETERMINATION OF FULL OPERATION DATE**

End of	MINIMUM AMOUNTS OF WATER NEEDED TO BE IN STORAGE AT THE END OF THE MONTH AT:	
	Gross storage for all reservoirs (Little Grass Valley, Sly Creek and Lost Creek)	Little Grass Valley Reservoir
December	84,200	27,000
January	82,000	29,000
February	81,000	34,000
March	110,000	41,000
April	118,300	48,000
May	122,300	52,000
June	122,000	53,000
July	121,000	53,000
August	119,000	52,000
September	102,300	50,700
October	93,400	50,500
November	89,300	50,500

THE FOLLOWING STORAGE CAPACITY TABLES SHALL BE USED IN THE DETERMINATION OF GROSS STORAGE CAPACITY:

Little Grass Valley Reservoir		Sly Creek Reservoir		Lost Creek Reservoir	
Elevation	Acre Ft.	Elevation	Acre Ft.	Elevation	Acre Ft.
5,046	93,010	3,530	64,670	3,281	5,680
5,045	91,380	3,520	59,070	3,277	5,100
5,040	83,480	3,510	53,450	3,275	4,820
5,030	68,890	3,500	48,150	3,265	3,600
5,020	55,880	3,490	43,170	3,255	2,540
5,010	44,440	3,480	38,500	3,245	1,620
5,000	34,580	3,470	34,130	3,235	850
4,990	26,260	3,460	30,070	3,225	340
4,980	19,400	3,450	26,290	3,215	80
4,970	13,850	3,440	22,770	3,210	0
4,960	9,490	3,430	19,540		
4,950	6,190	3,420	16,590		
4,940	3,830	3,410	13,920		
4,930	2,270	3,400	11,500		
4,920	1,260	3,390	9,300		
4,910	660	3,380	7,360		
4,900	340	3,370	5,700		
Interpolation between tabulated elevations shall be on a straight-line basis.		3,360	4,300		
		3,350	3,130		
		3,340	2,150		
		3,330	1,400		
		3,320	860		
		3,310	450		

1 OROVILLE-WYANDOTTE IRRIGATION DISTRICT
2 AND PACIFIC GAS AND ELECTRIC COMPANY

3
4 SLY CREEK POWER PURCHASE CONTRACT

5
6 THIS CONTRACT entered into this 26th day of
7 March, 1981, by and between PACIFIC GAS AND ELECTRIC COMPANY,
8 hereinafter referred to as "Pacific", and OROVILLE-WYANDOTTE
9 IRRIGATION DISTRICT, hereinafter referred to as "OWID".
10

11 W I T N E S S E T H :

12
13 WHEREAS, on September 25, 1979, the parties hereto
14 entered into a Memorandum of Understanding contemplating the
15 construction by OWID of its Sly Creek Power Project and the
16 purchase by Pacific of electric power generated by OWID at
17 that project;

18 WHEREAS, OWID has completed preliminary steps necessary
19 to provide for the said construction; and

20 WHEREAS, it is timely to enter into this Power Purchase
21 Contract ("Contract") in order to provide for said
22 construction and power purchase.

23 NOW THEREFORE, it is mutually agreed by and between the
24 parties hereto as follows:

25 1. This Contract includes Appendix A, Definitions;
26 Appendix B, Requirements and General Specifications for the

1 Sly Creek Power Project; Appendix C, Operation and
2 Maintenance Requirements; Appendix D, Memorandum of
3 Understanding, with revision; Appendix E, Power Purchase
4 Payment Schedule, and Appendix F, Letter from Tudor
5 Engineering Company attesting to the suitability of the
6 Melones turbine-generator unit for the Project. For
7 clearness, words or phrases defined in Appendix A are
8 underlined in the text.

9 2. OWID shall construct, at its own risk and expense,
10 and shall be the sole owner (under Federal Energy Regulatory
11 Commission License) of, the Project. OWID shall design,
12 construct, purchase and install all structures, equipment,
13 and facilities to meet the requirements and specifications
14 of Appendix B. The Project shall be substantially equal in
15 quality and design of materials, and in equipment and
16 facilities provided, to those which Pacific has installed in
17 its hydroelectric projects on Battle Creek. Pacific shall
18 make available to OWID for inspection, at Pacific's San
19 Francisco office, plans and specifications of said plants of
20 Pacific, and OWID may inspect any of such plants.

21 OWID shall submit to Pacific from time to time, as
22 soon as possible, all drawing designs, plans and
23 specifications of all portions of the Project and terms of
24 contracts relating to the construction and operation of the
25 Project. Pacific shall be provided this information so that
26 it has a reasonable time period in which to perform an

1 adequate review. Pacific shall have the right to inspect
2 all work performed by or for OWID in constructing elements
3 of the Project. Neither approval of, nor failure by Pacific
4 to approve, any plans or specifications, or inspections of
5 any work hereunder, shall relieve OWID of the responsibility
6 of meeting the requirements and general specifications set
7 forth in Appendix B, nor shall Pacific because of its
8 approval of, comment upon or failure to review such plans,
9 specifications, contracts or work be responsible to OWID or
10 anyone else for strength, details of design, adequacy or
11 capability of any structure, facility or work. OWID shall
12 keep Pacific fully and promptly informed of all matters
13 pertaining to the Project. Such information shall include,
14 but not be limited to, the information specified above in
15 this paragraph, and all agreements, license applications,
16 correspondence and data relating to the financing and
17 licensing of the Project.

18 OWID shall include the following provisions in all
19 cost reimbursable contracts entered into for the
20 construction of the Project; (1) the contractor shall make
21 its books and records relating to the items used for the
22 determination of billings available for review by OWID or
23 its representatives including Pacific, (2) after resolution
24 of any billing dispute where OWID is due a refund, such
25 refund shall be made to OWID including interest, and (3)
26 interest shall be compounded monthly and the rates used

1 shall be the first of the month prime rate(s) of the Bank of
2 America, plus one-half of one percent, and shall accrue from
3 the due date of the billing for the month under dispute
4 until the payment date of the dispute. In no event shall
5 the interest rate exceed the statutory interest rate
6 applicable to irrigation districts.

7 OWID shall use all reasonable efforts to resolve
8 billing disputes with such contractors promptly.

9 3. OWID shall acquire and, to the extent that it can
10 do so with money available from payments made by Pacific
11 pursuant to Paragraph 9(b) and Appendix C-5 and from money
12 available in the operation and maintenance fund as provided
13 in Appendix C-IV, maintain ownership of all lands,
14 easements, flowage rights, water rights, federal and state
15 licenses and permits, and all other rights and privileges
16 necessary for the foregoing purposes and for the operation
17 and maintenance of Project works and facilities in
18 accordance with Appendix C. OWID shall not voluntarily
19 convey, transfer or in any manner encumber any of such
20 rights without the written consent of Pacific.

21 4. On and after the Full Operation Date OWID, to the
22 extent that it can do so with money available from payments
23 by Pacific pursuant to Paragraph 9(b) and Appendix C-5 and
24 from moneys otherwise available in the operation and
25 maintenance fund as provided in Appendix C-IV, (a) shall
26 operate, maintain, repair and carry third-party bodily

1 injury and property damage liability insurance and property
2 insurance on the Project, substantially in accordance with
3 the practice followed by Pacific with respect to its
4 hydroelectric projects under Federal Energy Regulatory
5 Commission License, and shall carry mechanical breakdown and
6 use and occupancy insurance on the Project to the extent
7 reasonably available, and if such insurance is carried on
8 the South Fork Project; (b) shall replace structures,
9 facilities and equipment of the Project whenever they no
10 longer are capable of reliably or economically performing
11 the service for which they were designed; and (c) shall
12 operate such switching facilities as Pacific shall install
13 from time to time at the power plant of the Project,
14 including switching operations as requested by Pacific.

15 5. Pacific shall construct, own, operate and maintain
16 at its own risk and expense transmission lines required to
17 transmit the power generated by the power plant of the
18 Project into Pacific's transmission network. Pacific shall
19 acquire, in a form acceptable to Pacific, all lands,
20 easements, federal and state permits and all other rights
21 and privileges necessary to carry out its obligations under
22 this paragraph and use its best efforts to complete said
23 lines prior to completion of the Project by OWID. Failure
24 by Pacific to complete said lines by the time the Project is
25 capable of producing electric energy shall not relieve
26 Pacific of its obligations to make payments under Paragraphs

1 9(a), 9(b) and Appendix C-5.

2 6. OWID shall schedule the date of synchronizing the
3 generating unit with the transmission system and notify
4 Pacific thereof in writing six months in advance of the
5 schedule date. Pacific shall complete transmission lines to
6 the power plant within six months after receiving said
7 notice.

8 7. OWID shall sell and deliver to Pacific during the
9 term of this Contract all the electric power and energy
10 generated by the power plant of the Project, except the
11 power and energy delivered by OWID for Project Power Plant
12 Use. Delivery of power and energy to Pacific shall be at
13 OWID's high voltage disconnect switch at the Project, except
14 for such power and energy as Pacific shall request to be
15 delivered to it for transmission at generator voltage, in
16 which case such protective devices as OWID deems necessary
17 shall be installed by Pacific at Pacific's expense.

18 8. Pacific shall pay OWID 4 mills per kilowatt-hour
19 for energy delivered to Pacific hereunder prior to the Full
20 Operation Date.

21 9. Pacific shall pay OWID for all benefits derived
22 hereunder, including power and energy delivered, all of the
23 following:

24 (a) (i) Following the Full Operation Date and
25 until the termination of this Contract, semiannually amounts
26 in accordance with the attached Appendix E schedule of Power

1 Purchase Payments. No reduction or increase in, or
2 termination of said payments shall result from early
3 retirement, refunding or refinancing of Project Bonds.

4 (ii) In lieu of all or part of that part of
5 the payment made pursuant to subparagraph (a)(i) above
6 attributable to principal on the term Project Bonds (as
7 opposed to the serial Project Bonds), Pacific may (A)
8 deliver to OWID term Project Bonds theretofore issued by
9 OWID and acquired by Pacific, (B) deliver such documentation
10 of the price at which such term Project Bonds were acquired
11 by Pacific as OWID may reasonably require, and (C) pay to
12 OWID one-half the difference between (1) the aggregate
13 principal amount of such term Project Bonds and (2) the
14 aggregate price, including brokerage and other expenses and
15 excluding accrued interest, at which such term Project Bonds
16 were acquired by Pacific. Any such delivery of term Project
17 Bonds shall be credited against such payment to be made
18 pursuant to subparagraph (a)(i) above in the amount of such
19 aggregate principal amount of the term Project Bonds so
20 delivered plus interest accrued thereon and to accrue
21 thereon up to the date of the next interest payment thereon.
22 Any such delivery of term Project Bonds by Pacific shall be
23 made to the bond trustee as agent for OWID and for OWID's
24 benefit; provided, that the bond trustee shall hold bonds so
25 delivered as Pacific's escrow agent until the date the
26 applicable paragraph 9(a) payment is due and on that date

1 deliver them and the title thereto to OWID on the condition
2 that Pacific receives full credit against the applicable
3 paragraph 9(a) payment when the balance, if any, of the said
4 payment is made by Pacific.

5 (b) Following the Full Operation Date and until
6 the termination of this Contract, monthly, a sum estimated
7 as being necessary to pay the costs of repair, operation and
8 maintenance of the Project pursuant to Paragraphs 3 and 4,
9 and Appendices C and D. Such costs shall include, but not
10 be limited to insurance, taxes, trustee fees, annual audit
11 and fees of regulatory agencies having jurisdiction. Such
12 costs shall be budgeted annually by the parties, and the
13 said estimated amounts shall be made in monthly
14 installments; provided, such monthly payments shall not be
15 made when the balance in the operation and maintenance fund
16 established pursuant to Appendix C is greater than the
17 monthly payment to be made.

18 (c) Each year, an amount equal to the number of
19 Net Kilowatt Hours delivered to Pacific during the twelve
20 months preceding the anniversary of the Full Operation Date,
21 multiplied by a factor of the following mills per kilowatt
22 hour ("Additional Payment").

<u>Year of Operation</u>	<u>Mills/kwh</u>
1	0.5
2	1.0
3	2.0

4

6.0

5

7.0

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2
3 For the sixth year and succeeding years of
4 Project operation the Additional Payment shall be adjusted
5 each year as described in the portion of Appendix D titled
6 "Payment Adjustment Procedure". This factor shall not be
7 less than 7 mills per kilowatt hour after the fourth year of
8 operation.

9 10. Payments under Paragraph 9(a) shall be due and
10 payable each June 30 and December 31, or if either day falls
11 on a weekend or banking holiday, on the last business day
12 prior to that date, for the semiannual periods ending on the
13 dates shown in the Power Purchase Payment Schedule, Appendix
14 E. The first payment shall be prorated according to the
15 ratio of the number of days for which payment is to be made
16 to the number of days in the semiannual period for which
17 payment otherwise would be due. Any delivery of term
18 Project Bonds in lieu of payment, pursuant to Paragraph
19 9(a)(ii) shall be made not less than 60 days before the day
20 said payment would otherwise be due.

21 Payments under Paragraph 9(b) for each month or
22 part thereof shall be due and payable on the first day of
23 such month or other dates as agreed to by the parties.

24 Payments under Paragraph 9(c) shall be due and
25 payable each year within 15 days after receipt of invoice.
26

1 Payments under Paragraph 8 shall be due and
2 payable each month within 15 days after receipt of invoice.

3 11. (a) Subject to the provisions of Paragraph 16,
4 Pacific's obligation under Paragraphs 9(a) and 9(b) shall
5 not be dependent upon all or any part of the Project
6 continuing to be capable of operation, nor shall its
7 obligation under Paragraphs 9(a) and 9(b) be dependent upon
8 the ability of Pacific to take energy produced by or made
9 available from the Project. This provision, however, shall
10 not be deemed to relieve OWID of any of its obligations
11 hereunder.

12 (b) Pacific may offset any amounts due it from
13 OWID, by reason of this Contract or any breach thereof by
14 OWID against any amounts due OWID from Pacific hereunder,
15 except that no offset shall be applied by Pacific to reduce
16 the payments due from Pacific to OWID under the provisions
17 of paragraph 9(a).

18 12. OWID intends to finance construction of the
19 Project by the sale and issuance of Project Bonds duly
20 authorized by the electorate in accordance with the laws of
21 California. OWID shall proceed diligently with all
22 necessary action to have the Project Bonds issued to
23 complete such financing; provided, that OWID or Pacific
24 shall not be required to accept or agree to any conditions
25 or obligations in connection with any such financing which
26 OWID or Pacific deem unreasonably burdensome. If OWID shall

1 have proceeded diligently but shall not have completed such
2 financing on terms satisfactory to OWID or Pacific and
3 awarded Project construction contracts within 90 days of the
4 date of this Contract, this Contract shall thereupon
5 terminate and neither party shall have any further
6 obligation to the other under this Contract or be liable to
7 the other by reason of any expenses incurred or obligations
8 undertaken for the performance by it of this Contract or for
9 any damages suffered as a result of the termination of this
10 Contract. In the event of such termination, the parties
11 shall confer and endeavor to reach a solution that will
12 permit the Project to proceed and OWID shall continue to be
13 obligated to repay Pacific for advances of Development
14 Costs, with interest but only to the extent provided in
15 Paragraph 8C of Appendix D.

16 Upon completion of Project financing acceptable to
17 OWID and Pacific, each party shall furnish the other with a
18 certificate to that affect. Such certificates shall be
19 binding and conclusive upon OWID and Pacific, and thereafter
20 shall be no termination of any obligation under this
21 Contract by reason of any provisions of this paragraph.

22 13. OWID shall defend its water rights necessary or
23 useful to the operation of the Project.

24 14. Consistent with OWID's use for Project purposes,
25 OWID shall permit all roads, lands, rights-of-way and road
26 structures owned or controlled by it for Project purposes to

1 be used by Pacific in the performance of this Contract,
2 without additional cost or expense, for construction,
3 installation, operation, repair and maintenance of any works
4 or facilities of Pacific now in existence or hereafter
5 constructed or installed. Consistent with Pacific's use for
6 its own purposes, Pacific shall permit use by OWID of
7 Pacific's roads and rights-of-way without cost or expense
8 for the purpose of constructing, maintaining, repairing and
9 operating facilities of the Project. OWID hereby grants
10 Pacific a license, irrevocable during the Term of Contract,
11 to construct, install, operate, maintain, replace and
12 repair, upon properties of the Project facilities of
13 Pacific, including, but not limited to facilities for
14 transmission, transformation and distribution of electric
15 power and for switching and control, as are necessary and
16 desirable for the purpose of this Contract.

17 15. OWID shall indemnify Pacific, its officers,
18 agents, and employees against all loss, damage, expense and
19 liability to third persons for injury to or death of persons
20 or injury to property, proximately caused by OWID's
21 construction, ownership, operation, repair, or maintenance
22 of, or by failure of, any of OWID's works or facilities used
23 in connection with the Project. OWID shall, on Pacific's
24 request, defend any suit asserting a claim covered by this
25 indemnity. OWID shall pay any costs that may be incurred by
26 Pacific in enforcing this indemnity.

1 Pacific shall indemnify OWID, its officers,
2 agents, and employees against all loss, damage, expense, and
3 liability to third persons for injury to or death of persons
4 or injury to property, proximately caused by Pacific's
5 construction, ownership, operation, repair, or maintenance
6 of, or by failure of, any of Pacific's works or facilities
7 used in connection with the Project. Pacific shall, on
8 OWID's request, defend any suit asserting a claim covered by
9 this indemnity. Pacific shall pay any costs that may be
10 incurred by OWID in enforcing this indemnity.

11 16. Except as provided in Paragraph 12, this Contract
12 shall, except in case of condemnation of all or part of the
13 Project which precludes OWID from being able to fully
14 perform under this Contract, remain in effect so long as
15 OWID holds a Federal Energy Regulatory Commission License
16 and other necessary rights for the Project permitting full
17 performance by it of this Contract, but not beyond July 1,
18 2010, when this Contract shall terminate. Termination of
19 this Contract as a result of the loss by OWID of such rights
20 necessary for the full performance by it of its obligation
21 under this Contract with respect to the Project shall not
22 affect obligations of either party accrued hereunder prior
23 to such termination, but no further obligation shall accrue
24 subsequent to the date of such termination and final
25 payments as of the date of termination shall be prorated as
26 may be appropriate.

1 17. No voluntary assignment of this Contract, except
2 for security purposes in connection with OWID's financing of
3 the Project, shall be effective without the written consent
4 of Pacific.

5 18. Any dispute that may arise hereunder between OWID
6 and Pacific shall, upon the written request of either party
7 to the other, be submitted to and decided by arbitration.
8 Each of the parties shall, within 30 days after giving or
9 receiving such written notice, appoint one arbitrator. If
10 either party fails to appoint an arbitrator within such
11 time, such arbitrator shall be appointed by a Superior Court
12 of the State of California in accordance with the California
13 Code of Civil Procedure. At any time that either arbitrator
14 concludes they cannot agree, the two arbitrators shall
15 appoint a third arbitrator or, if they cannot agree upon a
16 third arbitrator, such arbitrator shall be appointed by said
17 Superior Court in accordance with said Code. A decision by
18 two of the arbitrators shall be binding on the parties. If
19 a decision cannot be reached within 90 days after
20 appointment of the third arbitrator, on written notice by
21 either party to the other, the arbitrators' authority shall
22 terminate and either party may submit the matter to an
23 appropriate court for decision.

24 Each party shall bear the expenses and fees of the
25 arbitrator appointed by it and its own expense involved in
26 the arbitration. The expenses and fees of the third

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arbitrator and all other expenses of arbitration shall be borne equally by Pacific and OWID.

19. The parties specifically understand and agree that in their negotiations they have taken into full account the provisions of the 1960 Contract and that such negotiations are subject to the terms and conditions of that contract.

20. If any of Paragraphs 15 or 18 of this Contract shall be held by a court of competent jurisdiction to be void, voidable or unenforceable, then such paragraphs shall be null and void and shall be deemed separable from the remaining paragraphs, covenants, agreements or portions of this Contract and shall in no way affect the validity of or enforceability of the remaining portions of this Contract.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the day and year first above written.

PACIFIC GAS AND ELECTRIC COMPANY
By *B. T. Shackelford*
President
By *Ernest*
Secretary

OROVILLE-WYANDOTTE IRRIGATION DISTRICT
By *Francis R. Duke*
President
By *Walter R. Emerson*
Secretary

APPENDIX A

DEFINITIONS

When used in the Contract, the following terms have the meaning hereinafter set forth:

A-1 Project

A hydroelectric power plant located at the downstream face of OWID's Sly Creek Dam on Lost Creek, a tributary to the South Fork Feather River, Butte County, California, as defined by the amended Federal Energy Regulatory Commission (FERC) License. Included are a new valve in the existing valve chamber, a penstock, a powerhouse of 13.2 MW using a refurbished Melones Powerhouse turbine generator, a 115 kV switchyard, Project Communication Facilities, road, operation and maintenance equipment, and all necessary appurtenances for each of the foregoing.

A-2 Project Communication Facilities

Facilities, adaptable for application of metering and control channels, required for communication between the Project and facilities of the OWID South Fork Project and for interconnection with OWID's communication system.

A-3 Project Road

Such roads as are needed to make the Project readily accessible for proper operation and maintenance.

A-4 Full Operation Date

The first date, after all elements of the Project have been completed and after the startup tests at Sly Creek Power Plant have been completed, on which the following simultaneously occur:

(a) Sly Creek Power Plant has all features and equipment capable of operating simultaneously in such condition and adjustment that the plant is capable of continuous delivery into Pacific's transmission lines at its full capacity for the then existing head of water.

(b) Sly Creek Penstock and all other elements of the Project are completed in all features and are capable of maintaining simultaneously such continuity of performance as is necessary for the reliable operation of the Project.

The fact that Sly Creek Power Plant has met the standards of Paragraph (a) above must be confirmed by satisfactory completion of performance tests, which shall be conducted as soon as possible and shall commence not later than 30 days after the first delivery of power from the plant. For the purpose of this paragraph, one of the performance tests, which shall follow the startup tests, shall include the satisfactory operation of the plant under the conditions of Appendix C-1 for a period of at least 30 days.

OWID shall be relieved of the necessity of such satisfactory completion of performance tests, and the Full Operation Date shall be deemed to have been confirmed even in the absence of such completion, to the extent that such tests cannot be

performed or completed because, (i) there is insufficient water in Sly Creek Reservoir for such tests, and (ii) OWID and Pacific do not or cannot make sufficient additional water available for such tests from upstream storage which they respectively own or control.

A-5 Project Power Plant Use

Use of electric power supplied solely from the powerhouse station service transformer bank and solely for operating and maintaining the Project powerhouse, valves, tunnel and storage building, and not for any other purpose.

A-6 Project Bonds

Revenue bonds issued or federal loans received by OWID to meet its obligations under the Contract.

A-7 Project Construction Costs

All costs of Project construction, including Development Costs, cost of acquisition of sites and easements, election, clearing, engineering and legal services, financing consulting services, interest on the Project Bonds during construction, application, permit and license fees and costs, inspection, insurance premiums, trustees' fees, bond paying agent fees, and all other costs incident to litigation, planning, investigation, authorization, financing and construction of the facilities, and contractors' incentive bonus, and salaries of the Project manager and Project operation personnel incurred prior to the Full Operation Date.

A-8 Memorandum of Understanding

The Memorandum of Understanding, dated September 25, 1979, between the parties as amended. A copy of such memorandum is attached as Appendix D.

A-9 Development Costs

Costs incurred pursuant to Paragraph 6 of Part I of Appendix D.

A-10 South Fork Project

That water storage and hydroelectric project as defined in the 1960 Contract.

A-11 1960 Contract

That contract known as the South Fork Power Purchase Contract between OWID and Pacific of June 15, 1960.

A-12 Net Kilowatt Hours

The number of kilowatt hours generated by the Project less the number of kilowatt hours supplied for Project Power Plant Use.

A-13 Term of Contract

The period from the execution date of this Contract to July 1, 2010.

Handwritten text, possibly bleed-through from the reverse side of the page. The text is extremely faint and difficult to decipher, but appears to be organized into several lines. Some characters are clearly visible, such as 'C' and 'C' in the lower half of the page.

APPENDIX B

REQUIREMENTS AND GENERAL SPECIFICATIONS

The following requirements and specifications cover the general conditions for major structures, equipment, and facilities for the Project. In addition to those herein described, the Project shall contain all structures and facilities needed for the development of power and for the operation and maintenance of the Project. Requirements and specifications herein contained may be changed by mutual consent of the parties.

It is essential to the economic feasibility of the Project and of this Contract that there be a minimum of lost generation caused by breakdowns of equipment and unnecessary delays in accomplishing repairs and replacements. Both in equipment design and in the time necessary to have replacements delivered, all equipment must be such that it can be repaired, and have replacements made, within a period of time substantially similar to that required for repairs and replacements of similar equipment which Pacific has installed in its hydroelectric projects on Battle Creek.

All manufacturers of equipment shall be experienced in the manufacture of the class, size, and rating of the various components specified herein.

All equipment and parts used and all measurements or dimensions shown on drawings shall conform to standards acceptable to Pacific.

B-1 Penstock

- (a) The design and fabrication of the penstock shall conform to the "The American Society of Mechanical Engineering Rules for Construction of Unfired Pressure Vessels", latest Edition, except where it may differ from the following requirements and limitations. Pressures for the design of the penstock shall include proper allowance for water hammer due to load rejection or to runaway speed, whichever is greater. In any event, the allowance for maximum water hammer shall not be less than 30 percent of the maximum static pressure. All welded penstock joints shall be 100 percent radiographed. Welded penstock joints shall be double butt-welded or single butt-welded joints using back-up strips. If single butt-welded joints with back-up strips are used, the back-up strip will be removed, the weld back-gouged and the weld brought back to full wall thickness. Field welding on the penstock except for

circumferential joints shall not be permitted. Penstock stress shall not exceed one-third the ultimate tensile stress with maximum 20 percent water hammer and welds assumed to be 100 percent efficient. The minimum pipe thickness without stiffeners shall not be less than the diameter in inches divided by 288. The interior of the penstock shall be coated with coal tar epoxy.

A penstock shutoff valve shall be installed at the head of the penstock. The valve shall be arranged so that it can be operated from the Sly Creek Powerhouse without external power for closing only, and so that it may be adjusted to close automatically when the flow exceeds a fixed percent estimated to be between 110 and 125 percent of the normal operating flow. The installation shall be equipped with appurtenant features, such as bypass valves, air valves, and drains.

The Sly Creek penstock diameter shall not be less than 7 feet 6 inches in diameter and 4 feet in diameter in the branch leading to the pressure relief valve.

B-2 Power Plant Installation

The power plant shall be capable of starting and operating, for the purpose of testing transmission lines, without being

connected to or dependent upon the transmission system constructed by Pacific pursuant to this Contract. The power plant shall have an installed capacity that will generate and have an input to the transmission line of not less than approximately 12,800 kilowatts at an effective head of approximately 225 feet with water flows of 758 cubic feet per second.

B-3 Turbine and Related Equipment

The turbine and related equipment, including but not limited to the pressure regulator turbine shutoff valve and governor, shall be equal in completeness of features and quality of design and materials in all respects to recent installations in Pacific's Battle Creek projects. Spare parts for the turbine and related equipment shall be provided to the same extent as in Pacific's said recent installations.

The turbine shall be of the vertical Francis type unit obtained from Pacific's Melones Powerhouse. After refurbishing, the turbine shall be rated not less than approximately 17,690 hp, 277 rpm, at an effective head of 225 feet when passing a flow of 758 cubic feet per second. The turbine shall be provided with a pressure regulator capable of continuous bypass of not less than 100% of turbine discharge capacity under maximum turbine output. The regulator shall be mechanically coupled to the turbine and

shall be adjustable for either synchronous bypass or water-saving operation.

B-4 Generator and Related Equipment

(a) General for Generator and Related Equipment

The generator and related equipment, including but not limited to an excitation system, storage battery, and voltage regulator shall be equal to in completeness of features and quality of design and materials in all respects to installations in Pacific's Battle Creek projects. Spare parts for the generator and related equipment shall be provided to the same extent as in Pacific's said installations. The generator shall be designed to withstand, without damage or distortion, the forces resulting from overspeed not less than 100 percent in excess of the rated speed.

(b) The nameplate rating of the generator shall be 6,600 volts, 0.90 power factor lagging, 1.10 short circuit ratio, 60 hertz, three-phase, 277 rpm, Class B insulation and not less than 13,500 kva.

B-5 Main Power Transformer

The main power transformer shall be 60 hertz, oil-insulated, and equal in completeness of features and in quality of design and materials in all respects to installations in Pacific's Battle Creek projects. The transformer shall have a full basic-impulse insulation level (BIL) corresponding to its voltage class and shall be provided with 100 percent lightning arresters adjacent to the high voltage terminals. The transformer rating shall be on the basis of 65°C rise.

The transformer shall be 115 kv insulation class with a three-phase bank rating of not less than 115 percent of the generator nameplate rating. The high voltage winding shall be grounded wye with the following full capacity taps:

122,500 volts
120,000 volts
117,500 volts
115,000 volts
112,500 volts

The low voltage winding shall be 6,600 volts, delta connected. The impedance at rate kva and voltage, and within standard tolerances, shall be not more than 10.75 percent.

B-6 Station Power Facilities and Other Equipment

Station power equipment and all other auxiliary equipment shall be equal in completeness of features and in quality of design and materials in all respects to installations in Pacific's Battle Creek projects.

The normal source of station power for the plant shall be from the generator bus. The plant shall be provided with an emergency power supply which shall be a transformer connected to Pacific's existing 12.47 kv distribution circuit.

The line circuit breaker shall be provided with an overhead structure, and disconnect switch to which Pacific's transmission line will be connected.

Adequate facilities shall be installed for modern relay protection to the transmission line constructed by Pacific pursuant to this Contract.

B-7 Project Communication Facilities

Adequate communication facilities shall be provided to insure reliable and efficient operation and maintenance of the Project. All Project Communication Facilities shall be equal in completeness of features and in quality of design and materials

in all respects to installations in Pacific's Battle Creek projects.

Communication between Woodleaf Powerhouse and Sly Creek Powerhouse shall be by a telephone cable or leased telephone facilities.

All communications equipment shall be DC operated, or AC with 100 percent standby power equipment. Wherever possible, integral systems shall be from the same manufacturer; however, responsibility for correct operation shall be assigned to OWID's Project construction contractor. Specifications shall include requirements for field performance tests.

B-8 Automatic Power Plant Facilities

(a) General for the Project Power Plant

The control, metering, protective, and alarm systems for the project plant shall be equal in completeness of features and in quality of design and materials in all respects to recent installations in Pacific's Battle Creek projects.

(b) Woodleaf Power Plant

Woodleaf Powerhouse shall be designed as the master station for control of the Project. Normal operation of the Sly Creek Powerhouse shall be by supervisory control from Woodleaf Powerhouse. Facilities shall be installed at Woodleaf Powerhouse for receiving and transmitting all communications necessary for supervisory control, telemetering, supervisory indications, and alarms as required for safe and reliable operation of the power plant, and other appurtenances with the Project. Similar equipment for control from Pacific's Table Mountain Substation shall also be provided. (Pacific will install the Table Mountain equipment.)

(c) Sly Creek Power Plant

Sly Creek Powerhouse shall be designed for manual control, local automatic control, and remote supervisory control with a transfer means to select the method of control. Normal operation shall be by remote supervisory control from Woodleaf Powerhouse. Sly Creek Power Plant will normally be loaded by float control from the Lost Creek Reservoir water level. The plant load shall be so designed and controlled to maintain automatically the Lost Creek Reservoir water level within a pre-selected and adjustable range. The float

controls shall automatically transfer from the turbine to the pressure regulator to maintain flow at the plant if the required flow through the turbine is interrupted for any reason. The control shall not interfere with the full and free operation of the governor so that the unit when detached from the system at the powerhouse or at a remote point, can maintain close frequency regulation on the load being supplied.

Separate alarm indications shall be transmitted to Woodleaf Powerhouse by the supervisory control equipment for, but not limited to, the following:

- (1) Unit shutdown
- (2) Unit separation
- (3) Miscellaneous station alarms

B-9 Gages and Meters

(a) Conduit Flow

A recorder shall be installed to provide a continuous record of flows in the penstock. Recorded flow may be measured at the powerhouse with a suitable recording device. A staff gage shall be provided in the tailrace.

(b) Power Plant Meters

In addition to the normal installation of transmission and generator meters, the following installations shall be made at the powerhouse:

- (1) For registration of delivery of power from the Project to Pacific, a
 - (i) Watt-hour meter with demand register, and with provision for adjustment to equivalent values at the high voltage delivery point, and
 - (ii) Watt-hour meter and transformer loss compensator with provision for adjustment to equivalent values at the high voltage delivery point, for revenue metering, and
 - (iii) Recording wattmeter.
- (2) For registration of delivery of power from Pacific to the Project, a watt-hour meter with demand register and with provision for adjustment to equivalent values at the high voltage delivery point.

- (3) For registration of delivery of power for Project Power Plant Use, a watt-hour meter with demand register.
- (4) For registration of Project power plant voltage, a recording voltmeter.

Meters specified above for items (1), (2), and (4) are to be connected to the low voltage side of the main transformer bank. The meter specified above for item (3) is to be connected to the source side of the station service transformer bank.

B-10 Startup and Performance Tests

- (a) A complete testing and checking program shall be outlined and scheduled well in advance of the delivery of first power. The program shall include checks on all equipment guarantees and general checking of all components of plant and facilities and the interrelated functions of the various facilities. The generating unit shall be tested insofar as practicable to full capability, and the setting of the protective devices shall be coordinated with the limits of the unit. All checks and tests shall be thoroughly documented and included in a comprehensive startup test report so that the proper functioning of all facilities and equipment under all normal and emergency operating conditions

shall be known and so that the necessary information shall be available for the Project.

(b) Performance tests for the turbine and generator shall be made by OWID in the presence of Pacific's representatives as soon as possible and shall commence not later than 30 days after first delivery of power. The tests shall be thoroughly documented and included in a comprehensive test report.

(c) All records obtained in all tests and checks shall be made available to Pacific. OWID shall provide Pacific with four copies of all test reports. Preliminary copies of startup and performance test data shall be given to Pacific within 10 days following each test.

B-11 Permanent Road

Access to the powerhouse will utilize existing roads. The road shall be drained, graded, and gravel surfaced, as necessary to maintain access to the plant during normal operation, and shall be suitable for a mobile crane of 50-ton loading and for moving the transformer into and out of the powerhouse.

B-12 Housing and Buildings

The yard level at the powerhouse shall be above the maximum flood stage.

The powerhouse deck shall be designed to support a mobile crane capable of lifting the shaft and rotor, and also to support a 50-ton mobile crane used for maintenance purposes.

The tailrace shall be protected against erosion by rip-rap or other suitable means. The power plant, tailrace, road, buildings, fences, and other critical areas shall be properly signed for ownership, water releases, warning to trespassers, or as may be necessary.

B-13 Operation and Maintenance Tools and Equipment

On the Full Operation Date, the Project shall be equipped with necessary machine and hand tools, vehicles, and other equipment and supplies purchased by OWID and required for operation and maintenance of the Project.

B-14 Drawings, Specifications, and Other Information

Within six months following the Full Operation Date, OWID shall provide Pacific: Two 11-inch by 17-inch reduced size copies and

one full size copy of all drawings, all of which shall have been brought up to date; not less than three copies of all manufacturers' drawings and instruction books; and copies, or originals, of all pertinent correspondence and data. All manufacturers' drawings and instruction books and all other drawings for the Project shall be numbered and indexed by OWID.

Unless otherwise agreed, OWID shall store reproducible copies of all drawings and copies of all contracts, specifications, instruction books, and other pertinent data and correspondence for the Project in a vault. OWID's Project manager shall conform such drawings and instruction books to reflect changes in facilities and equipment as such may occur from time to time, and when any such changes are conformed, shall furnish Pacific with copies thereof.

APPENDIX C

OPERATION AND MAINTENANCE REQUIREMENTS

The following provisions shall govern the operation and maintenance of the Project, except as may otherwise be agreed upon from time to time by the parties. It is not the intent of the parties that abnormal replacements occur immediately prior to the termination of the Contract nor is it the intent of the parties that normal maintenance or replacement be neglected immediately prior to such termination. It is the intention that the condition of the structures, facilities and equipment at the termination of the Contract shall be that expected considering the age of the structures, facilities and equipment and using normal maintenance practices throughout the Term of Contract.

I. OPERATION

C-1 General

OWID shall operate the Project, insofar as is consistent with OWID requirements of water for domestic and irrigation purposes, FERC License requirements for the Project and the agreements between OWID, and Federal and State agencies heretofore executed, in accordance with schedules, which shall be furnished from time to time by Pacific for impounding, release and use of water through Sly Creek Powerhouse. Project operation and maintenance shall be consistent with OWID's activities and operation of its South Fork Project and its obligations under the

1960 Contract. OWID shall, consistent with the requirements of Paragraph 4 of the Contract, to the extent it can do so with money available from payments made by Pacific pursuant to Paragraph 9(b) of this Contract and from money available in the operation and maintenance fund as provided in Appendix C-IV, from time to time make such changes in Project facilities as may be concluded are reasonably required to improve economy of operation and shall employ only such personnel as are concluded to be reasonably necessary to operate and maintain the Project in an economic manner. Pacific and OWID shall exchange information necessary for effective and economic operation and maintenance of the Project.

OWID may, at its discretion, use its South Fork Project personnel, as appropriate, to staff the Project. The parties shall agree upon a suitable means for accounting for costs and expenditures.

C-2 Requirements for the Support of Fish Life

OWID shall limit diversions for the support of fish life to the various flows specified in the 1960 Contract or such other diversions as required by the FERC License for this Project and/or shall be agreed upon by OWID and Pacific. p.14 C-3

II. MAINTENANCE

C-3 Inspection

OWID shall make such inspections, investigations and tests, both routine and extraordinary, as are called for by the best engineering and operating practice and shall afford Pacific full

opportunity to inform itself as to the condition of the Project and the elements thereof by giving Pacific notice and opportunity to join with OWID in inspections, investigations and testing, and by submission to Pacific of copies of reports as to the results thereof. OWID shall give Pacific access to OWID's properties for the purpose of any inspections, investigations and tests which Pacific may desire to perform independently of OWID. Pacific shall be given full opportunity to inspect the performance of any maintenance work on the Project by OWID, its employees, agents, and contractors.

C-4 Scheduling

OWID shall notify Pacific of contemplated maintenance work which would affect operation of the Project, and shall cooperate with Pacific in scheduling the work by advancing or postponing the time of performance so as not unnecessarily to cause power loss or inconvenience to Pacific. Such maintenance work shall be completed in the shortest possible time and, if requested by Pacific, shall be performed on a 24-hour per day basis including Sundays and holidays.

III. PERFORMANCE BY PACIFIC

C-5 Operation and Maintenance

OWID shall have no obligation to perform under this Appendix, or to operate, repair, or maintain the Project pursuant to Paragraphs 3 and 4 of the Contract or to repay any sums paid by Pacific or interest thereon, except to the extent that OWID can do so with money received from payments made by Pacific

pursuant to Paragraph 9(b) of the Contract and with money deposited in the operation and maintenance fund pursuant to Appendix C-8. At any time when the operation and maintenance fund is exhausted and moneys received by OWID under Paragraph 9(b) of this Contract are insufficient to pay the operation, repair, and maintenance costs of the Project, Pacific shall pay OWID each month such additional sums as may reasonably and necessarily be required to pay such costs.

In the event that OWID fails or is unable to operate, repair, or maintain the Project in accordance with this Contract, in lieu of making such additional payments, Pacific may upon reasonable notice to OWID, which may be 24 hours or less in case of urgency, enter upon, operate, repair, and maintain the Project, as may be necessary, for and on behalf of OWID, but at Pacific's own cost and expense. In such event, OWID hereby employs Pacific to act as such operator and hereby consents and agrees that Pacific may enter upon the Project and act as such operator, until OWID shall provide satisfactory assurance that it is able to and will perform satisfactory operation, repair, and maintenance of the Project. Pacific's determination as to the necessity for, and manner of, operation or maintenance, and as to the amount of expenses incurred hereunder, in the event Pacific shall take over such operation, shall be conclusive in the absence of bad faith.

IV. FUNDS, DEPOSITS AND WITHDRAWALS

C-6 Establishment of Funds

To assure construction of the Project and its proper operation, repair and maintenance, and to enable performance of the obligations provided for in this Appendix and in Paragraphs 3 and 4 of the Contract, OWID shall establish a construction fund and an operation and maintenance fund under a trust agreement with a trustee chosen by mutual agreement of the parties hereto.

C-7 Trustee

The trustee shall be a bank or trust company authorized to do and doing business in the State of California and having capital and surplus of at least \$50,000,000.

C-8 Deposits

A. Construction Fund

OWID shall deposit in the construction fund upon receipt (a) all moneys received from the proceeds of the Project Bonds, except the amount received as accrued interest upon the issuance of the Project Bonds and the amount required to be set aside for the payment of interest on the Project Bonds during construction; (b) all moneys received or recovered by OWID under surety bonds executed by any construction contractor to guarantee performance of the Project construction contract or under any policy or contract of insurance insuring against physical loss or damage to the Project prior to the Full Operation Date; (c) all moneys received as liquidated damages from any construction contractor, which moneys are not required for payment of

principal or interest on Project Bonds; (d) all moneys earned on investments of moneys in the construction fund or received from the sale of such investments; (e) all moneys received from contractors prior to Full Operation Date for any required inspection fees or for penalty payments; (f) all moneys earned from investment of the Project Bond proceeds set aside for the payment of interest on the Project Bonds during construction; (g) any balance remaining on Full Operation Date from Project Bond proceeds set aside for the payment of interest on the Project Bonds during construction, after provision for payment of interest accrued on the Project Bonds to Full Operation Date; and (h) all moneys received by OWID from the voluntary sale of Project property, other than power and water, prior to Full Operation Date.

B. Operation and Maintenance Fund

OWID shall deposit in the operation and maintenance fund upon receipt unless otherwise specified: (a) moneys received under Paragraph 9(b) and Appendix C-5 of the Contract; (b) on and after the date of the first payment by Pacific under Paragraph 9(a) of the Contract, the balance remaining in the Project Construction Fund, after provision for payment of all Project Construction Costs to the extent allowed by law; (c) on each June 30 and December 31, one-half of the excess by which that power payment received on such date pursuant to Paragraph 9(a) of this Contract, and interest earnings thereon, exceed the amount needed by OWID to pay interest on and principal of bonds

(including bonds which mature prior to the termination date of this Contract, issued to refund Project Bonds) issued to finance the Project, but only to the extent that such one-half of the excess is money which Pacific is entitled to receive from early retirement, retirement at a discount, refinancing or refunding of Project Bonds pursuant to the second paragraph of Paragraph 5 of Part I of Appendix D, but subject to the third paragraph of Paragraph 5 of Part I of Appendix D; (d) all moneys received or recovered under any policy or contract of insurance insuring against physical loss or damage to the Project on and after Full Operation Date; and (e) all moneys received by OWID from the voluntary sale of Project property, other than power and water, after Full Operation Date.

C-9 Withdrawals

Withdrawals may be made from the construction fund and the operation and maintenance fund only as provided in the following paragraphs.

C-10 Withdrawals by OWID

A. Construction Fund

OWID shall be entitled to withdraw money from the construction fund to pay Project Construction Costs. For each authorized withdrawal, OWID shall, by written certificate signed by the President of its Board of Directors or its authorized representative, certify to the trustee the amount actually expended or owing. Upon receipt of such certificate, said trustee shall thereupon be empowered to pay said amount.

B. Operation and Maintenance Fund

(a) OWID shall be entitled to withdraw money from the operation and maintenance fund to pay (i) debts incurred pursuant to Paragraphs 3 and 4 of the Contract and C-I and C-II of this Appendix, including premiums for insurance required by Paragraph 4 of the Contract including such deductible or self-insured retention provisions as are agreed upon by OWID and Pacific, (ii) any other charges included from time to time within the FERC Uniform System of Accounts prescribed for Public Utilities and Licensees, including taxes, if any, imposed on any interest which OWID may be found to have in the Project, and (iii) compensation and expenses of OWID's officers, directors or non-Project personnel up to \$1,000 in any year plus any mutually agreed adjustment or added expenditure. OWID shall not be entitled to withdraw money from the operation and maintenance fund to pay (i) compensation of personnel in excess of that paid by California public agencies for similar services; (ii) any costs properly allocable to irrigation and domestic water purposes; (iii) any costs of recreation facilities not required by FERC License; and (iv) any costs incurred pursuant to Paragraphs 15 and 18 of this Contract.

(b) For each authorized withdrawal, OWID shall, by written certificate signed by the President or other authorized representative, certify to the trustee of said fund the amount actually expended or owing and Pacific shall, by written certificate signed by its duly authorized representative, certify

to said trustee that such payment is a proper charge under the Contract. Upon receipt of such certificates, said trustee shall thereupon be empowered to pay said amounts.

C-11 Withdrawals by Pacific

Pacific shall be entitled to withdraw money from the operation and maintenance fund to pay (a) its costs of operation and maintenance incurred at any time pursuant to Appendix C-5, calculated in accordance with Pacific's established billing procedure as outlined in Pacific's Accounts Payable-Billing Other Parties (Rev. Oct., 1968) as hereafter amended or superseded; (b) taxes, if any, imposed on any interest in the Project which Pacific may be found to have under the Contract, or imposed on Pacific because of the purchase by or delivery to it of power, energy or falling water under the Contract; and (c) interest, at a rate equal to the most recent rate of return found to be reasonable by the Public Utilities Commission of the State of California on Pacific's Electric Department rate base, on any amount owed to Pacific by the operation and maintenance fund to reimburse Pacific for said costs or taxes, such interest to accrue until the time when moneys are available in said fund to pay said debt. For each such withdrawal Pacific shall, by written certificate signed by its President or its authorized representative, certify to the trustee of said fund the amount for which it is entitled to payment and OWID shall, by written certificate signed by the President or its authorized representative, certify to said trustee that such payment is a proper

charge under the Contract. Upon receipt of such certificates, said trustee shall thereupon be empowered to pay said amounts.

C-12 Terminations

Upon the termination of the Contract, all amounts remaining in the operation and maintenance fund shall be paid to OWID except that any amount that Pacific may be entitled to by reason of the second paragraph in Paragraph 5 of Part I of Appendix D shall be paid to Pacific and except that any amount that Pacific may be entitled to by reason of Appendix C-11 shall be withheld upon Pacific's certificate alone and retained until the respective rights of OWID and Pacific shall be finally ascertained.

C-13 Reliance by Trustee

Trustee, in all matters relating to the operation of and withdrawal from the said funds shall be entitled to rely upon the certificates of OWID and Pacific and shall not be obligated to make an independent determination of the facts certified.

C-14 Investment

Any portion of the construction fund, or the operation and maintenance fund may be invested in United States government securities at the direction of OWID or in such other securities as may be agreed upon in writing by OWID and Pacific. All interest and other income received from such investment shall be deposited in and become a part of said funds.

C-15 Expenses of Trustee

The expenses and fees of the bond trustee or fiscal agent and bond paying agents and the expenses and fees of the trustee in connection with the handling of said funds shall be paid from the construction fund prior to the Full Operation Date, and from the operation and maintenance fund after said date.

C-16 Financial Statements

The trustee monthly shall submit to OWID and Pacific an itemized account showing the current status of the said funds and all disbursements made therefrom during the preceding month.

OWID monthly shall submit to Pacific itemized statements showing the current status of said funds and all transactions relating to the Project during the preceding month and shall make its books and records relating to the Project available for monthly audit by Pacific. Any findings by Pacific where it determines that withdrawals from the said funds are not appropriate shall be reported to OWID and resolved promptly. After resolution, adjustments shall be made to the applicable fund including interest. The interest rate used shall be the first of the month prime rate of the Bank of America during the period adjusted, plus one-half of one percent, but not in excess of what is permitted by law, and shall accrue from the date of the withdrawal from the fund until the date the adjusted amount is deposited in the fund.

C-17 Notice: Re Possible Possessory Interest Taxation

In compliance with Revenue and Taxation Code section 107.6, OWID hereby gives Pacific notice that under this Contract a possessory interest subject to property taxation may be created and such property interest may be subject to property taxation if created and Pacific may be subject to the payment of property taxes levied on such interest. Pacific hereby acknowledges such notice but does not agree that any such property interest would be created.

APPENDIX D

AGREEMENT

(Revising the Memorandum of Understanding between Oroville-Wyandotte Irrigation District and Pacific Gas and Electric Company dated September 25, 1979)

This Agreement, dated March 26, 1981 is entered into between OROVILLE-WYANDOTTE IRRIGATION DISTRICT, hereinafter referred to as "OWID", and PACIFIC GAS AND ELECTRIC COMPANY, hereinafter referred to as "Pacific".

WHEREAS:

OWID and Pacific have entered into a Memorandum of Understanding, dated September 25, 1979; and

OWID and Pacific have entered into a Power Purchase Contract, on this date, that is based on the said Memorandum of Understanding; and

OWID and Pacific desire to modify and supplement said Memorandum of Understanding to be consistent with agreements made in said Power Purchase Contract.

NOW THEREFORE, OWID and Pacific agree that said Memorandum of Understanding be changed as follows:

1. Paragraph 1. of Part I, last subparagraph, is amended to read:
"All Equipment and designs used in the Project shall be substantially equal in quality and design to such similar equipment and structures which Pacific has installed in its hydroelectric projects on Battle Creek."
2. Paragraph 2. of Part I is amended to read:
"PROJECT CONSTRUCTION COSTS: All costs of Project construction, including Development Costs, as defined in Paragraph 6 of this Understanding; cost of acquisition of equipment, sites and easements; election, clearing, engineering, and legal services; financing consulting services; interest on the Project Bonds during construction; application, permit, and license fees and costs; inspection, insurance premiums, trustee's fees, bond paying agent fees, and all other costs incident to litigation, planning, investigation, authorization, financing, and construction of the Project, including contractor's incentive bonus."
3. Paragraph 4. of Part I, first subparagraph, is amended to read:
"OBLIGATIONS OF PACIFIC: Pacific agrees to enter into a contract similar in form to the 1978 Rollins Power Purchase Contract between Pacific and Nevada Irrigation District and the 1960 Contract, as appropriate, for the purchase of the output of capacity and energy of the Project for the period

from the date of completion of construction of the Project to July 1, 2010 (hereinafter referred to as the Term of Contract)."

4. Paragraph 4(a) of Part 1 is amended to read:

"(a) An amount equal to the total amount required to pay debt service (established on an essentially level annual debt service basis) on the Project Bonds issued and/or Loan obtained to finance the Project construction costs as defined in Paragraph 2 of this Understanding. Said amounts shall be made in semi-annual installments to correspond to Project Bond principal and interest payments over the Term of Contract starting with the Full Operation Date of the Project. Full Operation Date shall be when all features and equipment of the Project are capable of operating simultaneously in such condition and adjustment that the Project is capable of continuous delivery into Pacific's transmission lines at its full capacity. No reduction or increase in, or termination of said payments shall result from early retirement, refunding or refinancing of said Project Bonds."

5. Paragraph 4(e) is deleted.

6. Paragraph 5. of Part I, first subparagraph, is amended to read:

"SAVINGS: All proceeds received from the sale of Project Bonds or Loan will be deposited with a trustee to enable

construction of the Project. Any such money remaining upon confirmation of the Full Operation Date after provision for payment of all Project construction costs, shall be deposited in the Project operation and maintenance fund, to the extent allowed by law. That portion of additional money remaining, but not permitted to be deposited in the Project operation and maintenance fund shall be deposited in an early redemption account established by the Project Bond resolution."

7. Paragraph 5 of Part I, second subparagraph, is amended to read:

"Except for savings that result from the use of excess construction fund moneys, as described above, savings, if any, that may result from early retirement, retirement at a discount, refinancing or refunding of the Project Bonds or Loan, payment for which debt service is to be made by Pacific under Paragraph 4(a) of this Understanding, shall be equally divided between OWID and Pacific."

8. Paragraph 8.(d) of Part I is amended to read:

"If, at any time prior to the sale of Project Bonds, OWID determines that the annual bond debt service is too burdensome, OWID may discontinue participation in the Project. If OWID implements this option, OWID will give Pacific the first right of refusal to participate in any OWID Sly Creek Dam hydroelectric power project proposed

during the five years following the date OWID discontinues participation in the Project. After this five year period, OWID's obligation to sell power from such project to Pacific shall terminate and OWID shall be free to contract for the disposal of project power to others or itself use the power."

9. Paragraph 7. of Part II, first sentence, is amended to read:
"Pacific will pay for the water described in Paragraph 5(a)(2) and Paragraph 6 above if it can be used for power generation in the South Fork Project.

IN WITNESS WHEREOF, on the date first above written the parties hereto have executed this agreement.

PACIFIC GAS AND ELECTRIC COMPANY

By *B. W. Shackelford*
President

By *J. Taylor*
Secretary

OROVILLE-WYANDOTTE IRRIGATION DISTRICT

By *Francis R. Drake*
President

By *Walter L. Emerson*
Secretary

POWER PURCHASE PAYMENT SCHEDULE

Date Due	Power Purchase Payment	Date Due	Power Purchase Payment
July 1, 1984	\$ 391,655.79	July 1, 1997	\$ 628,309.60
January 1, 1985	908,269.84	January 1, 1998	1,113,284.15
July 1, 1985	777,672.66	July 1, 1998	604,362.24
January 1, 1986	917,644.84	January 1, 1999	1,144,337.76
July 1, 1986	771,372.66	July 1, 1999	577,699.20
January 1, 1987	926,344.84	January 1, 2000	1,177,675.80
July 1, 1987	764,397.66	July 1, 2000	548,073.60
January 1, 1988	934,369.84	January 1, 2001	1,213,051.40
July 1, 1988	756,747.66	July 1, 2001	515,238.56
January 1, 1989	946,719.84	January 1, 2002	1,250,217.69
July 1, 1989	748,197.66	July 1, 2002	478,947.20
January 1, 1990	958,169.84	January 1, 2003	1,298,927.80
July 1, 1990	738,747.66	July 1, 2003	438,458.88
January 1, 1991	973,719.84	January 1, 2004	1,348,441.12
July 1, 1991	727,937.66	July 1, 2004	393,526.72
January 1, 1992	987,909.84	January 1, 2005	1,398,510.78
July 1, 1992	715,717.66	July 1, 2005	343,903.84
January 1, 1993	1,000,689.84	January 1, 2006	1,463,889.91
July 1, 1993	702,180.16	July 1, 2006	288,602.72
January 1, 1994	1,022,152.34	January 1, 2007	1,528,591.03
July 1, 1994	686,820.16	July 1, 2007	227,376.48
January 1, 1995	1,041,792.34	January 1, 2008	1,607,367.27
July 1, 1995	669,291.68	July 1, 2008	159,237.60
January 1, 1996	1,064,264.57	January 1, 2009	1,689,231.15
July 1, 1996	649,788.16	July 1, 2009	83,692.32
January 1, 1997	1,084,761.84	January 1, 2010	1,778,688.93

Tudor Engineering Company

3 February 1981

ENGINEERING EVALUATION OF UNIT NO. 1
TURBINE AND GENERATOR AT PG&E'S
MELONES POWERHOUSE FOR USE AT SLY CREEK POWER PLANT

1. Background

Following construction of the New Melones Dam and Power Plant by the Corps of Engineers, PG & E's Melones Power Plant was shut down and the two identical units decommissioned on July 8, 1976. In 1978 Unit No. 2 of the PG & E plant was removed for refurbishing and installation at Rollins Powerhouse, California. Construction of the Rollins project was completed in 1980. It is proposed to refurbish and use the remaining Unit No. 1 in a new powerhouse to be constructed at Sly Creek Dam, California.

The units according to PG & E drawing 37955 are rated as follows:

Turbine - 17,900 HP at 225 feet net head, 277 RPM
Generator - 13,500 KVA at 0.9 load factor,
6,600 V, 3 phase, 60 cycles

Both units were purchased by PG & E, installed in a new powerhouse and placed in service in 1926. The turbines were designed and manufactured by the S. Morgan Smith Co. of York, Pennsylvania (predecessor of the Hydraulic Turbine Division of Allis Chalmers Corporation). The generators were designed and manufactured by the Westinghouse Corporation, Pittsburgh, Pennsylvania. Performance tests were made by C. M. Allen using the Salt Velocity Method following installation.

2. Operations History

The units have, as far as is known, operated continuously since they were placed in service in 1926 and decommissioned in 1976, a period of 50 years. The units were operated at heads from 114 feet to 225 feet to meet seasonal demands. The units were operated at loads up to 14,000 kW on a continuous basis and intermittently for peaking, depending on the demand.

Interviews with PG & E operating personnel at the Angels Camp Division headquarters were carried out by Tudor Engineering Company staff. These personnel reported that the units had performed satisfactorily. Maintenance had been performed annually and no major overhaul had been required. On Unit No. 1 a guide bearing on the generator was re-babbitted shortly after the original commissioning of the unit. The failure of the bearing was attributed to faulty installation. Routine weld repair on the runner was done annually and reported to be, about or less than, that customarily experienced for this type of turbine. The original generator windings were still in use and were considered to be in satisfactory operating condition when the unit was decommissioned. The temperature rise experienced at overload had been within accepted limits and cut back of power from overload was only required on exceptionally warm days. Replacement of the windings, however, will be made when the unit is refurbished and relocated, using modern insulation systems. Maintenance logs for the units were made available in January 1981, for the years prior to decommissioning.

3. Field Inspection

Unit No. 2 was inspected by Tudor Engineering Company in 1978. Accessible portions of Unit No. 1 were also inspected at that time. Further inspection of Unit No. 1 was carried out in 1980, including the runner. No defects were observed in accessible parts during these inspections. Given the successful and

lengthy period of operation, it was not considered advisable to dismantle the unit. Further inspection will be carried out as part of the refurbishing process to determine the suitability of certain components for future use. An ultrasonic inspection of the accessible areas of the shaft was made by an independent inspector in 1980 and no defects were found. Operating tests under load could not be carried out on the units. The turbine shutoff valve from Unit No. 1 was removed for 1978 for use at Rollins Power Plant. A new valve will be provided at Sly Creek.

In 1977 and 1978, during the investigation stage for the use of Unit No. 2 at Rollins, Tudor Engineering Company staff held discussions with Allis Chalmers, the successor of the original manufacturer as well as Axel Johnson, General Electric and Westinghouse. All of these indicated that they considered that the Unit could be satisfactorily used in its new location at Rollins, after refurbishing and the addition of any necessary new parts. Field inspection by all of these Companies was made in 1978 prior to their submitting bids for Unit No. 2 removal and refurbishing for use at Rollins.

Subsequent inspection was made by these same Companies and the Leffel Company, in 1980, prior to bidding for the Sly Creek Project. Earlier discussion with these Companies and Tudor Engineering staff indicated that the Companies considered that Unit No. 1 could be successfully refurbished for further use.

4. Unit No. 2 Experience

Unit No. 2 was removed from the Melones Powerhouse in 1978, refurbished and installed in the Rollins Powerhouse of the Nevada Irrigation District in Colfax, California. All reusable parts were found to be serviceable and suitable for refurbishing. Some field modifications to the original design were made during the construction. The unit began generating power in August 1980.

5. Refurbishing

For installation of Unit No. 1 at Sly Creek, the specifications for the refurbishing of the unit require replacement with new material or equipment of all wearing surfaces, instrumentation, piping, generator stator windings, rotor pole piece insulation and auxiliary equipment. Major new components for the generator consist of an excitation system and an enclosed air-water cooling system. New components for the turbine will consist of the spiral case, the draft tube, turbine shutoff valve and governing system. Since it is not practicable to remove the pressure relief valve from Melones Powerhouse, another valve and connecting mechanism will be provided at the Sly Creek Power Plant. All new components will be designed, manufactured and tested to current PG & E standards for this type of equipment. Replacement equipment and material will also meet these standards.

6. Modifications

Use was made of the experience obtained during installation and operation of Unit No. 2 at Rollins Power Plant. As a result, some modifications have been specified for the installation of Unit No. 1 at Sly Creek. A new isolated turbine bearing oil system is specified to prevent water intrusion into the oil, and straightening vanes will be added to the draft tube with a view to limiting any tendency to produce power swings during performance at part load.

7. Performance Guarantees

The contract specifications require that the General Contractor shall use qualified turbine and generator manufacturers to undertake the refurbishing, design and manufacture of the unit. Power output, performance, temperature rise, surge protection and other requirements are equal to current PG & E standards. Field

1 received. OWID and Pacific herewith set forth terms that
2 are to be incorporated in the contract for the sale and
3 purchase of the capacity and energy to be produced.

4 1. THE PROJECT: The OWID South Fork Project, Federal
5 Power Commission License No. 2088 ("License"), was completed
6 in 1962 and financed through revenue bonds being amortized
7 by OWID using payments being received from Pacific under a
8 contract with Pacific to purchase the power produced by the
9 South Fork Project. One of the features of the South Fork
10 Project is Sly Creek Reservoir. Water is now being released
11 for downstream use from Sly Creek Reservoir at the outlet
12 works. OWID proposes to install a hydraulic turbine and
13 generator at the outlet works and generate power from the
14 falling water.

15 The Project features would consist of a
16 refurbished turbine-generating unit from Pacific's
17 decommissioned Melones Powerhouse which includes a Francis
18 turbine about 18,000 hp and a generator about 13,500 kw in
19 size with a 0.90 power factor, a 21 kv or a 115 kv
20 switchyard, control and communication equipment and
21 associated facilities. Consideration may be given to use of
22 a new turbine-generating unit with an installed capacity
23 about 10,000 kw. The final selection of equipment and
24 sizing of the unit (in approximately the above sizes) will
25 be determined upon mutual agreement of OWID and Pacific
26 after further studies. A penstock would be installed in the

1 existing Sly Creek Dam. No additional Project features are
2 contemplated.

3 Where consistent with the 1960 Contract and amend-
4 ments thereto, power will be generated from the Project when
5 water is released from Sly Creek Reservoir and both Little
6 Grass Valley Reservoir and Sly Creek Reservoir will be
7 operated by OWID to maximize energy generation and capacity
8 availability consistent with good electric utility operating
9 practice. This paragraph, however, will continue to permit
10 OWID to operate the South Fork Project in a manner con-
11 sistent with supplying water for domestic and irrigation
12 purposes using prudent water carry over practices.

13 All equipment and designs used in the Project
14 shall be substantially equal in quality and design to such
15 similar equipment and structures which Pacific has installed
16 in its hydroelectric projects during the past 15 years on
17 the Feather, McCloud and Pit Rivers and which Nevada Irriga-
18 tion District is installing at its Rollins Project.

19 2. PROJECT CONSTRUCTION COSTS: Project construction
20 costs include all costs of equipment, construction, contrac-
21 tor's incentive bonus, development costs defined in Para-
22 graph 6 of this Understanding, costs of acquisition of the
23 site and easements, interest during construction, inspec-
24 tion, insurance premiums, trustee fees, bond paying agent
25 fees, legal fees and all other costs incident to litigation,
26 planning, investigation, authorization, financing and con-

1 struction of the Project.

2 3. OBLIGATIONS OF OWID: OWID, organized in 1919
3 under the California Irrigation District Act and Acts amen-
4 datory thereto, has the authority pursuant to Division 11 of
5 the Water Code of California and subject to the approval of
6 government regulating commissions, agencies and departments
7 having jurisdiction, to obtain water, power and other neces-
8 sary rights to carry out and finance the proposed Project.
9 OWID will exercise those rights and work vigorously toward
10 the completion of the Project.

11 OWID agrees to use its best efforts to construct,
12 own, operate and maintain the Project at its own risk and
13 expense and shall acquire all lands, easements, Federal and
14 State permits and other rights and privileges necessary to
15 carry out its obligations under this paragraph. All such
16 permits, licenses, and rights shall be in a form acceptable
17 to Pacific.

18 OWID will make Project electric capacity available
19 and the delivery of Project energy to Pacific shall be at
20 OWID's high tension disconnect switch at the Project switch-
21 yard.

22 OWID will use its best efforts to finance con-
23 struction of the Project through the sale of revenue bonds
24 ("Bonds") and/or a loan of Federal funds ("Loan"). The
25 Bonds and/or Loan shall be secured by a pledge of payments
26 to be made by Pacific under Paragraph 4(a) hereof.

1 The following additional provisions shall apply to
2 the issuance of said Bonds in the order listed below:

3 (a) To the extent that applicable law and regula-
4 tions permit, tax exempt Bonds will be issued.

5 (b) To the extent that sale of Bonds under Para-
6 graph 3(a) hereof is not possible, OWID will endeavor
7 to sell taxable Bonds as close to par as practical.

8 OWID will pay, as an incentive bonus for early
9 completion of Project construction, \$1,000 per day to the
10 construction contractor for each day between actual comple-
11 tion of construction and scheduled completion of construc-
12 tion. Time allowed for construction shall be mutually
13 agreed upon by OWID and Pacific. The construction contract
14 shall provide that in the event that the construction
15 contractor fails to complete construction of the Project in
16 the allowed time, he will pay liquidated damages in an
17 amount at least sufficient to cover debt service on the
18 bonds.

19 4. OBLIGATIONS OF PACIFIC: Pacific agrees to enter
20 into a contract similar in form to the 1978 Rollins Power
21 Purchase Contract between Pacific and Nevada Irrigation
22 District and the 1960 Contract, as appropriate, for the
23 purchase of the planned output of capacity and energy of the
24 Project for the period from the date of completion of con-
25 struction of the Project to July 1, 2010 or such other
26 period as may be as defined in Paragraph 4(e)(2) below

1 (hereinafter referred to as the Term of Contract).

2 Pacific agrees to construct, own, operate and
3 maintain at its own risk and expense, transmission lines
4 required to transmit the power generated by the Project.
5 Pacific shall acquire in a form acceptable to Pacific, all
6 lands, easements, Federal and State permits and all other
7 rights and privileges necessary to carry out its obligations
8 under this paragraph and use its best efforts to complete
9 said lines prior to the completion of construction of the
10 Project by OWID.

11 If Pacific fails to complete said transmission
12 facilities prior to the Project being able to generate
13 energy, it shall nevertheless be obligated to make the
14 payments under Paragraphs 4(a) and 4(b) as hereinafter
15 provided to the same extent as though said facilities were
16 completed.

17 In consideration of its rights hereunder to
18 receive all of the Project output of capacity and energy
19 during the Term of Contract, Pacific agrees to enter into a
20 contract under which it agrees to pay to OWID all of the
21 following:

22 (a) An amount equal to the total amount required
23 to pay debt service (established on an essentially
24 level annual debt service basis) on the Bonds issued
25 and/or Loan obtained to finance the Project
26 construction costs as defined in Paragraph 2 of this

1 Understanding. Said amounts shall be made in
2 semi-annual installments to correspond to Bond
3 principal and interest payments over the Term of
4 Contract starting with the full operation date of the
5 Project. Full operation date shall be when all
6 features and equipment of the Project are capable of
7 operating simultaneously in such condition and
8 adjustment that the Project is capable of continuous
9 delivery into Pacific's transmission lines at its full
10 capacity. No reduction or increase in, or termination
11 of said payments shall result from early retirement,
12 refunding or refinancing of said Bonds.

13 (b) The expense of maintenance, operation, and
14 repair of the Project, including but not limited to
15 insurance, trustee fees, bond paying agent fees, annual
16 audit and fees of regulatory agencies having jurisdic-
17 tion shall be budgeted annually by the parties and pay-
18 ments to cover the actual operation, maintenance, and
19 repair expense shall be made in monthly installments
20 over the Term of Contract. Payments to cover otherwise
21 unprovided for items of repair and maintenance shall be
22 made immediately by Pacific in addition to the above
23 when required.

24 (c) For all power generated prior to the full
25 operation date of the Project, an amount equal to the
26 number of kilowatt hours generated less the number of

1 kilowatt hours supplied from the Project generator for
2 Project power plant use, multiplied by a factor of
3 \$0.004 per kilowatt hour.

4 (d) For the first five years, on or about each
5 anniversary date of full operation of the Project, an
6 amount equal to the number of net kilowatt hours
7 delivered to Pacific during the preceding twelve months
8 multiplied by a factor of the following mills per
9 kilowatt hour ("Additional Payment").

10	<u>Year of Operation</u>	<u>Mills/kwh</u>
11	1	0.5
12	2	1.0
13	3	2.0
14	4	6.0
15	5	7.0

16 The next Additional Payment shall be made on or about
17 the first April 1 following the fifth year of operation
18 and will cover the generation produced in the remainder
19 of the previous calendar year. All succeeding
20 Additional Payments shall be made annually on or about
21 April 1 and will cover generation produced in the
22 previous calendar year. The factor used to compute the
23 Additional Payments that follow the fifth year 7
24 mill/kwh Payment shall be calculated as described in
25 Exhibit "A", "Payment Adjustment Provision for Sly
26 Creek Project". This factor shall not be less than

1 \$0.007 per kilowatt hour after the fourth year of
2 operation.

3 (e) To the extent the annual Bond debt service
4 payment is:

5 (1) Less than \$1,200,000 per year, Pacific
6 will pay OWID an annual amount equal to fifty
7 percent (50%) of the reduction below \$1,200,000
8 per year.

9 (2) More than \$1,200,000 per year and OWID
10 does not discontinue participation in the develop-
11 ment of the Project pursuant to Paragraph 8(d),
12 the Term of Contract will be extended by one year
13 for each \$25,400 the annual Bond debt service
14 payment exceeds \$1,200,000. Or, at OWID's
15 discretion, OWID will pay to the trustee the
16 difference between \$1,200,000 and the actual
17 annual Bond debt service.

18 (f) At the end of the Term of Contract, Pacific
19 will have the right of first refusal to negotiate a new
20 contract.

21 5. SAVINGS: All proceeds received from the sale of
22 Bonds or Loan will be deposited with a trustee to enable
23 construction of the Project. Any such money remaining upon
24 confirmation of the full operation date after provision for
25 payment of all Project construction costs, shall be
26 deposited in the Project operation and maintenance fund.

1 Savings, if any, that may result from early
2 retirement, retirement at a discount, refinancing or
3 refunding of the Bonds or Loan, payment for which debt
4 service is to be made by Pacific under Paragraph 4(a) of
5 this Understanding, shall be equally divided between OWID
6 and Pacific.

7 In the event and to the extent that OWID uses
8 funds other than those received from Pacific under Paragraph
9 4(a) of this Understanding for Bond repayment, any savings
10 that may result from early retirement, retirement at a
11 discount, refinancing or refunding of the Bonds or Loan will
12 accrue solely to the benefit of OWID.

13 6. DEVELOPMENT COSTS: Pacific and OWID will each pay
14 50% of all Project development costs as defined below. The
15 total of these costs shall not be allowed to exceed \$600,000
16 unless a larger expenditure is approved by Pacific and OWID.
17 Pacific and OWID will review and approve all proposed
18 development cost expenditures, including the amount and
19 scheduling of such expenditures. Pacific and OWID shall be
20 reimbursed, with interest described below for these
21 expenditures from the sale of Project bonds or receipt of
22 the Loan. However, if it appears to Pacific during the
23 development stage that due to permit or License restrictions
24 the Project's operation will not be as described in
25 Paragraph 1 above, Pacific will have the option to withdraw
26 from the Project. Pacific will then retrieve all of its

1 development cost expenditures by reducing the payments to
2 OWID described in Paragraph 3 and 4 of Part II of this
3 Understanding by 25% until all Pacific's expenditures are
4 repaid with interest described below.

5 Any funds advanced by OWID and/or Pacific shall be repaid
6 with an interest charge compounded monthly on such advances
7 from the date the advance is made until it is repaid. The
8 interest rate shall be equal to Pacific's pretax weighted
9 cost of capital. Such rate shall be determined annually.

10 The balances for long-term debt, preferred stock, and common
11 equity shall be the actual book balances as of the end of
12 the prior year. The cost rates for long-term debt and
13 preferred stock shall be their respective embedded costs.

14 The cost rate for common equity shall be the one most
15 recently granted by the California Public Utilities
16 Commission. The current effective tax rate will be used.

17 In no event shall the interest rate exceed the statutory
18 interest rate applicable to irrigation districts.

19 Development costs include but are not limited to the
20 following:

- 21 (a) Costs of soils and geological investigations.
- 22 (b) Costs of surveying and mapping.
- 23 (c) Costs of obtaining water rights.
- 24 (d) Costs of obtaining the License amendment.
- 25 (e) Fees of the State Treasurer and costs of
26 hearing on certification of Bonds.

1 (f) Costs of preliminary engineering prior to
2 commencement of final design and final design
3 engineering.

4 (g) Cost of printing and distribution of
5 documents relating to the sale of Bonds and rating
6 service fees.

7 (h) Cost of complying with NEPA and CEQA.

8 (i) Cost of election, certification, validation,
9 and proceedings related to the Bond issues.

10 (j) Cost of all additional work performed by OWID
11 in order to accomplish the work set forth.

12 It is the intent of both parties that expenditures
13 for development of the Project be kept to a minimum. To
14 minimize risk of loss to Pacific of funds advanced, these
15 expenditures will be deferred as long as possible without
16 delaying the progress of the Project.

17 OWID will establish a development fund with a
18 trustee under conditions and procedures similar to those
19 outlined in the 1960 Contract. OWID will submit quarterly
20 withdrawal statements for Pacific's approval and upon such
21 approval Pacific and OWID shall make equal deposits as
22 needed up to the approved amount into the development fund.
23 To make withdrawals from the development fund, OWID shall
24 submit a signed withdrawal statement to certify to the
25 trustee the amount expended or owed, and Pacific shall sign
26 the same statement to certify to the said trustee that such

1 payment is a proper charge under this Understanding. Upon
2 receipt of such statement, said trustee shall thereupon be
3 empowered to pay said amount. All income derived from
4 investment of the development funds by the trustee shall be
5 credited to the development fund.

6 7. INFORMATION TO BE MADE AVAILABLE TO PACIFIC: It
7 is agreed that OWID will keep Pacific fully and promptly
8 informed of all matters pertaining to the Project and that
9 such information, including but not limited to the
10 following, will be sent to Pacific:

11 (a) All drawings, designs, plans, specifications
12 and terms of contracts relating to the construction and
13 operation of the Project will be sent to Pacific for
14 its review. Pacific will be provided this information
15 so that it has a reasonable time period to perform an
16 adequate review. Neither approval of, comment upon,
17 nor failure by Pacific to review any plans or
18 specifications, or inspections of any works hereunder,
19 shall relieve OWID of the responsibility for complying
20 with this Understanding, nor shall Pacific, because of
21 its approval of, comment upon or failure to review such
22 plans, specifications or works, be responsible to OWID
23 or anyone else for strength, detail of design, adequacy
24 or capability of any structure, facility or work.

25 (b) Copies of all agreements, license
26 applications, correspondence and data relating to the

1 financing and licensing of the Project will be sent to
2 Pacific.

3 OWID shall submit monthly to Pacific itemized
4 statements showing the current status of the development
5 fund and all transactions relating to the Project during the
6 preceding month and shall make its books and records
7 relating to the Project available for monthly audit by
8 Pacific. Any findings by Pacific where it determines that
9 withdrawals from the said fund are not appropriate shall be
10 reported to OWID and resolved promptly. After resolution,
11 adjustment shall be made to said fund including interest.
12 The interest rate used shall be as set forth in Paragraph 6
13 of this Understanding and shall accrue from the date of the
14 withdrawal from the fund until the date the adjusted amount
15 is deposited in the fund.

16 8. WITHDRAWAL OF PARTICIPATION:

17 (a) Pacific shall have the right to withdraw from
18 participation in the Project, and thereby terminate its
19 obligations to OWID, at any time prior to the sale of
20 Bonds or receipt of Loan to enable OWID to award a
21 contract for the construction of the Project.

22 (b) If it appears that OWID cannot, despite its
23 best efforts, construct the Project under the terms or
24 financial arrangements provided for in this Under-
25 standing or of the contract based upon it, the parties
26 shall confer and endeavor to reach a solution that will

1 permit the Project to proceed. If the parties are
2 unable to agree upon a solution within a period of six
3 months after the parties first so confer, unless other-
4 wise agreed, Pacific shall be deemed to have withdrawn
5 from participation in the Project and thereby its obli-
6 gation to OWID shall be terminated.

7 (c) Upon Pacific's termination under 8(a) or 8(b)
8 above, OWID's obligation to sell power from the Project
9 to Pacific shall terminate and OWID shall be free to
10 contract for the disposal of such power to others or
11 itself use the power. If OWID thereafter is able to
12 construct electric generation at Sly Creek Reservoir
13 substantially as contemplated in this Understanding,
14 funds advanced by Pacific and not retrieved by Pacific
15 under Paragraph 6 above shall be refunded to Pacific,
16 with interest as specified in Paragraph 6. If OWID is
17 not able to construct such electric generation, it
18 shall have no obligation to reimburse Pacific for any
19 funds advanced other than those which Pacific would
20 retrieve as described in Paragraph 6.

21 (d) If and when Project annual bond debt service
22 is determined to be greater than \$1,200,000, OWID may
23 discontinue participation in the Project. If OWID
24 implements this option instead of one of the options in
25 Paragraph 4(e)(2), OWID will give Pacific the first
26 right of refusal to participate in any OWID Sly Creek

1 Dam hydroelectric power project proposed during the
2 five years following the date OWID discontinues
3 participation in the Project. After this five year
4 period, OWID's obligation to sell power from such
5 project to Pacific shall terminate and OWID shall be
6 free to contract for the disposal of project power to
7 others or itself use the power.

8 9. FEDERAL POWER ACT: The parties specifically
9 understand and agree that in their negotiations they have
10 taken into full account the provisions of Section 10(f) of
11 the Federal Power Act relating to upstream benefits. They
12 agree that such benefits are of the essence of this
13 Understanding and that the considerations forming a part of
14 this Understanding take into full account and include both
15 those upstream benefits to be provided by Pacific to OWID,
16 and those upstream benefits to be provided by OWID to
17 Pacific, and that neither party during the Term of Contract
18 is entitled to any further consideration with respect to
19 such benefits. In the event that, by reason of any
20 requirement of the Federal Energy Regulatory Commission or
21 other governmental authority having jurisdiction so to do,
22 either party hereto is required to pay headwater benefits to
23 the other by reason of such facilities, the amounts to be
24 paid by Pacific to OWID under Paragraph 4(b) shall be
25 reduced by the amount of any such headwater benefit payment
26 made to OWID or increased by the amount of any such

1 headwater benefit payment received from OWID.

2 10. ADVISORY COMMITTEE: A Project Advisory Committee
3 will be formed to ensure orderly development of the Project,
4 and will continue in existence until execution of the power
5 purchase contract. The committee will consist of
6 representatives of OWID and Pacific as appropriate. Any
7 action by the committee that affects the use or the
8 scheduling of the funds to be advanced by Pacific will
9 require Pacific's approval.

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PAYMENT ADJUSTMENT PROCEDURE

Note: This Procedure will be used to calculate the annual adjustment to both the "Additional Payment" (Part I, Paragraph 4(d) of this Understanding) and the payment for water (Part II, Paragraph 5 of this Understanding). For simplicity, both shall be referred to as "Payments" in this Procedure.

PAYMENT ADJUSTMENT PROCEDURE

The Payments will be increased or decreased annually by a percent equal to the percent change of the weighted average cost per kilowatt hour of fossil and nuclear fuels used in Pacific's conventional steam electric units in the prior calendar year, carried to the nearest \$0.00001 per kilowatt hour. The adjustments shall be calculated using the Payment Adjustment Formula shown on page 21.

For the sole purpose of implementing the above procedure the following terms shall have the following meanings:

- (a) Fossil fuel includes only, when directly fired, natural gas, residual and distillate fuel oils, crude oil, and coal.

- (b) Conventional steam electric units are those turbogenerator units owned and operated by Pacific which utilize steam generated from fossil or nuclear fuels for the generation of electricity, which do not provide process steam, and which do include combustion turbine units when operated as a part of a combined cycle plant.

- (c) Btu is the higher heating value in British Thermal Units of each fuel used in each generating unit, adjusted to be equivalent to the effective heat derived from the burning of natural gas in a typical boiler.
- (d) Cost of fossil fuel is Pacific's recorded cost of such fuel in Account No. 501 of the Uniform System of Accounts prescribed by the Federal Energy Regulatory Commission.
- (e) Cost of nuclear fuel is Pacific's recorded cost of amortization of nuclear fuel assemblies, including an allowance for salvage value, determined in accordance with Account No. 518, Nuclear Fuel Expense, of said Uniform System of Accounts.
- (f) Weighted average cost per kilowatt hour of fossil and nuclear fuels shall be determined by multiplying the net kilowatt hour output of Pacific's commercially operable conventional steam electric units from fossil fuels by \$0.00001 per kilowatt hour for each \$0.001 per million Btu of average fossil fuel cost in such units and adding the result to the cost of nuclear fuel in conventional steam electric units and then dividing that sum by the total net kilowatt hour output of conventional steam electric units.

Payment Adjustment Formula

$$\text{Payment for Year } X + 1 = P_x + P_x \left[\frac{\Delta_x - \Delta_{x-1}}{\$0.02/\text{kwh} + \Delta_{x-1}} \right]$$

Where: P_x = Payment in previous year

$$\Delta_x = \frac{(\$0.00001/\text{kwh}) K_f A_f + C_n}{K_f + K_n} - \frac{(\$0.00001/\text{kwh}) K_f A_f + C_n}{K_f + K_n}$$

$\substack{x-1 & x-1 \\ x-1 & x-1}$

$$- \frac{(\$0.00001/\text{kwh}) K_f A_f + C_n}{K_f + K_n}$$

$\substack{1978 & 1978 \\ 1978 & 1978}$

$$\Delta_{x-1} = \frac{(\$0.00001/\text{kwh}) K_f A_f + C_n}{K_f + K_n} - \frac{(\$0.00001/\text{kwh}) K_f A_f + C_n}{K_f + K_n}$$

$\substack{x-1 & x-1 \\ x-1 & x-1}$

$$- \frac{(\$0.00001/\text{kwh}) K_f A_f + C_n}{K_f + K_n}$$

$\substack{1978 & 1978 \\ 1978 & 1978}$

K_f = net output of Pacific's conventional steam electric units from fossil fuels, in Kwh.

K_n = net output of Pacific's conventional steam electric units from nuclear fuels, in Kwh.

A_f = cost of fossil fuel used in Pacific's conventional steam electric units, in \$/million Btu.

C_n = cost of nuclear fuel in Pacific's conventional steam electric units, in \$.

Δ_{x-1} = change in Pacific's weighted average cost/Kwh of fossil and nuclear fuels during the period from January 1, 1979 through December 31, year x-1.

Δ_x = change in Pacific's weighted average cost/Kwh of fossil and nuclear fuels during the period from January 1, 1979 through December 31, year x.

Sample Calculations

Adjust Additional Payment (Part I, Paragraph 4(d))^{1/}

Use Payment Adjustment Formula on previous page.

Assumed Data: year x - 1 = 1986
year x = 1987
year x + 1 = 1988
 $P_x = \$0.007/\text{kwh}$

$$\Delta_{x-1} = \Delta_{1986} = \$0.01615/\text{kwh}^{2/}$$

$$\Delta_x = \Delta_{1987} = \$0.01750/\text{kwh}^{2/}$$

Calculate New Payment in 1988:

$$\begin{aligned} P_{x+1} &= P_x + P_x \frac{\Delta_x - \Delta_{x-1}}{\$0.02/\text{Kwh} + \Delta_{x-1}} \\ &= .007 + .007 \frac{.01750 - .01615}{.02 + .01615} \\ &= .007 + .007 (.03734) \\ &= \$0.00726/\text{kwh} = \text{Additional Payment in 1988.} \end{aligned}$$

^{1/} Adjustment of the Part II, Paragraph 6 water payment would be calculated in the same manner.

^{2/} K_f , K_n , A_f , and C_n data used to compute Δ were obtained from Pacific's Electric Supply Plan, "Common Forecasting Methodology II", Docket No. 77-EA-10 prepared for ERCDC, March 1978, Form R-2.

Note:

The information presented in this calculation is an estimate only. Pacific makes no representations or guarantees that actual energy data and energy payments will correspond to these estimates, and assumes no liability in the event such data or payment differs. Actual data and payment will be affected by many factors which are difficult at best to estimate, and over which Pacific has no control. Included, but not limited to, are world energy prices and regulatory and political decisions and policies.

1 Part II

2 Water Purchase

3 W I T N E S S T H A T:

4 Whereas OWID no longer intends to sell surplus
5 water¹ to Pacific at the 1960 Contract rates; and

6 Whereas OWID and Pacific are entering into a
7 Memorandum of Understanding to develop the Sly Creek Power
8 Project ("Project");

9 OWID and Pacific agree to the following:

10 1. OWID will, beginning October 1, 1979 and for the
11 remaining term of the 1960 Contract, reduce its diversion
12 entitlements as shown in Paragraphs C-2(a) and C-2(b) of
13 Appendix C of the 1960 Contract at Forbestown Ditch to 3,720
14 AF/year and at Miners Ranch Reservoir to 17,056 AF/year
15 during the First Period and to 29,439 AF/year during the
16 Second Period. The reduced entitlements shall be in
17 accordance with the tabulations shown in Exhibit A. OWID
18 will give Pacific not less than two years notice before
19 revising the Forbestown Ditch reduced entitlement and such
20 revision shall not result in a diversion entitlement greater
21 than 6,220 AF/year. Water made available by the reduced
22 entitlements shall be used by South Fork Project power
23 plants for the remaining term of the 1960 Contract.

24
25 ¹ Surplus water is water shown in the diversion entitlement tables
26 for OWID under Paragraphs C-2(a) and C-2(b) of Appendix C of the
1960 Contract and which is not diverted for consumptive use from
the South Fork Project.

1 2. For the remaining term of the 1960 Contract OWID
2 will forego its present contractual right shown in the
3 fourth paragraph of Appendix C-2(b) of the 1960 Contract, to
4 increase its annual entitlement by up to 26,000 AF at Miners
5 Ranch Reservoir. For this, Pacific will pay OWID \$38,600
6 semi-annually beginning January 1, 1983 and continuing for
7 the period of the 1960 Contract.

8 3. Pacific will pay OWID, in addition to the payments
9 in Paragraph 2 above, beginning on January 1, 1980 and
10 ending January 1, 1981, a quarterly payment of \$56,000; then
11 a semiannual payment of \$112,000 thereafter. These payments
12 shall continue until:

13 (a) the date that the Project begins commercial
14 operations at which time the semiannual payment would
15 be increased to \$184,000 for the remainder of the term
16 of the 1960 Contract or

17 (b) if the Project cannot proceed under the terms
18 and conditions of Part I of this Understanding, the
19 semi-annual payment would remain \$112,000 for the
20 remainder of the 1960 Contract.

21 4. If OWID elects to increase the diversion
22 entitlement at Forbestown Ditch, as outlined in Paragraph 1
23 above, to the maximum allowable amount of 6220 AF/yr., then
24 the semiannual payments of \$112,000 or \$184,000 in Paragraph
25 3 above would be reduced respectively to \$85,000 or
26 \$148,000. If OWID chooses a diversion entitlement between

1 3720 AF/yr and 6220 AF/yr., the payments would be computed
2 linearly between the above payment figures.

3 5. It is the intent of both OWID and Pacific that the
4 OWID diversion entitlements under Paragraph 1 above shall
5 not be subject to subsequent increases in diversions by
6 OWID. Should OWID for any reason increase its diversions
7 from the South Fork Project above 6,220 AF/year at
8 Forbestown Ditch or above 17,056 AF/year (First Period),
9 29,439 AF/year (Second Period) at Miners Ranch Reservoir,
10 OWID shall immediately compensate Pacific for lost capacity
11 as follows:

12 a. The semiannual payments in Paragraphs 3 and 4 of
13 this Part II shall be discontinued for the
14 remainder of the term of the 1960 Contract.
15 Pacific will then pay OWID the following rates for
16 water described in Paragraph 10 of the 1960
17 contract:

18 (1) Prior to January 1, 1983, the rates described
19 in Paragraph 10 of the 1960 Contract shall
20 apply; then

21 (2) Beginning January 1, 1983:

22 (a) if the Project is completed under terms
23 and conditions of Part I of this Under-
24 standing, the rate described in Para-
25 graph 7 of this Part II will apply.

26 (b) If the Project cannot proceed under the

1 terms and conditions of Part I of this
2 Understanding, then the rate described
3 in Paragraph 7 of this Part II would
4 only apply to water used for generation
5 at Kelly Ridge Powerhouse. The rates in
6 Paragraph 10 of the 1960 Contract would
7 apply to water used for generation at
8 Woodleaf and Forbestown Powerhouses.

9 b. The terms of the 1960 Contract and the Project
10 Contract would each be extended to compensate
11 Pacific for the total capacity portion¹ of the
12 payments paid to OWID under Paragraphs 3 and 4
13 above during the previous 5 years. The extension
14 would be computed by dividing the total of these
15 capacity payments (\$) by the total payments made
16 by Pacific during the previous calendar year for
17 bond debt service and operation and maintenance,
18 for the South Fork Project and the Project (\$/yr).

19 6. In addition to water made available to Pacific,
20 under Part II of this Understanding, OWID will provide
21 Pacific each year a forecast of any other water which OWID
22 determines will have which is surplus to its requirements.
23

24
25 ¹ The capacity portion of the payments is in parenthesis following
26 the respective payment: \$112,000 (\$86,000), \$184,000 (\$86,000).
\$85,000 (\$65,000), \$148,000 (\$65,000).

1 Included would be any unused portion of OWID's increased
2 entitlement in the second period of the 1960 Contract,
3 Appendix C, Paragraph C-2(b), as amended in Exhibit A of
4 this Part II. If OWID can generate power with this water,
5 Pacific will pay OWID as shown in Paragraph 7 below.

6 7. Pacific will pay for the water described in
7 Paragraph 6 above if it can be used for power generation in
8 the South Fork Project. OWID will offer this water at the
9 rate of \$0.018/kwh (at OWID's high tension disconnect switch
10 at each plant) beginning January 1, 1983. Beginning on or
11 about April 1, 1984, and on each succeeding April 1, this
12 rate will be adjusted annually by the Payment Adjustment
13 Procedure in Exhibit A, Part I. In no event will the
14 adjusted payment be less than \$0.018 per kwh of generation.
15 For purposes of determining the additional payment to OWID
16 described in this paragraph, the average duty of water
17 through the South Fork Project power plants is mutually
18 agreed to be as follows: Woodleaf = 1236 Kwh/AF, Forbestown
19 = 684 Kwh/AF, and Kelly Ridge = 519 Kwh/AF. These water
20 duty amounts can be adjusted as determined by results of
21 testing as mutually agreed by both parties. Payments under
22 this paragraph would not apply to water that is otherwise
23 made available under other paragraphs of this Understanding
24 or that would be taken away from projects owned by Pacific
25 or projects covered under Pacific's existing power purchase
26 contracts.

1 8. OWID will, between the date of execution of this
2 Understanding and December 31, 1991, spend at least \$1
3 million of the increased payments under Paragraphs 2, 3, 4,
4 and 7 of this Part II above on capital improvements of its
5 major water transmission and distribution systems that would
6 minimize losses of water diverted from the Project and South
7 Fork Project power plants. Beginning in 1986, OWID shall
8 spend a minimum of \$150,000 per year on the improvements
9 until the \$1 million total is reached. OWID shall consult
10 with Pacific on the nature and extent of the improvements
11 prior to their construction.

12 OWID monthly shall submit to Pacific itemized
13 statements showing the current status of these capital
14 improvement expenditures and all transactions relating to
15 the capital improvement expenditures during the preceding
16 month and shall make its books and records relating to the
17 capital improvements available for monthly audit by Pacific.
18 Any findings by Pacific where it determines that the said
19 expenditures are not appropriate shall be reported to OWID
20 and resolved promptly.

21 EXECUTION OF UNDERSTANDING: This Understanding
22 will become binding upon its execution by both parties. The
23 1960 Contract shall remain in full force and effect except
24 as amended in this Understanding.

Part II
Exhibit A

OWID DIVERSION ENTITLEMENTS, IN ACRE-FEET

	Forbestown Ditch				Miners Ranch Reservoir				
	Existing Contract	Proposed Reduction		Revised Entitlement	Existing Contract		Proposed Reduction	Revised Entitlement	
		*4,500 AF	7,000 AF		4,500 AF	7,000 AF		1st Period	2nd Period
January	369	237	369	132	0	615	0	615	615
February	334	215	334	119	0	555	0	555	555
March	553	355	553	198	0	615	0	615	615
April	1,009	649	1,009	360	0	1,485	550	935	1,649
May	1,285	665	1,035	620	250	2,890	1,150	1,740	3,094
June	1,369	578	900	791	469	4,046	1,700	2,346	4,250
July	1,400	435	676	965	724	5,288	2,800	2,488	4,886
August	1,400	435	676	965	724	5,288	2,800	2,488	4,886
September	1,200	373	580	827	620	5,058	2,700	2,358	4,619
October	800	249	387	551	413	3,006	1,300	1,706	3,060
November	600	186	290	414	310	595	0	595	595
December	401	123	191	278	210	615	0	615	615
Total	10,720	4,500	7,000	6,220	3,720	30,056	13,000	17,056	29,439

* The 4,500 AF tabulations represent the minimum allowable reduction in OWID's Forbestown Ditch entitlements (see Part II, Paragraph 1).

Executed this 25th day of September 1979.

PACIFIC GAS AND ELECTRIC COMPANY

BY *Pat Sheehan*
President

BY *Isaylor*
Secretary

OROVILLE-WYANDOTTE IRRIGATION DISTRICT

BY *Shapel M. Gentry*
President

BY *Walter A. Emerson*
Secretary

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**PG&E Gas and Electric
Advice Filing List
General Order 96-B, Section IV**

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City of Palo Alto Utilities	Manatt Phelps Phillips	Tecogen, Inc.
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Coast Economic Consulting	Merced Irrigation District	TransCanada
Commercial Energy	Modesto Irrigation District	Turlock Irrigation District
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Crossborder Energy	Morrison & Foerster	Utility Cost Management
Davis Wright Tremaine LLP	NLine Energy, Inc.	Utility Specialists
Day Carter Murphy	NRG West	Verizon
Defense Energy Support Center	Navigant Consulting	Wellhead Electric Company
Department of Water Resources	Norris & Wong Associates	Western Manufactured Housing Communities Association (WMA)
	North America Power Partners	eMeter Corporation